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No. 215.

In the Supreme Court of the United States

OCTOBER TERM, 1902

THE SINGER MANUFACTURING COMPANY,
Petitioner,

vs.

HERMAN CRAMER,
Respondent.

Brief on Behalf of Respondent.

STATEMENT OF FACTS.

This case comes here by writ of *certiorari* to the circuit court of appeals for the ninth circuit. The action was at law, brought by respondent, Herman Cramer, against the petitioner, Singer Manufacturing Company, to recover damages for the infringement of patent No. 271,426, which had been granted to said Cramer on January 30, 1883, for an

improvement in sewing machines. A verdict was rendered in favor of Cramer for $12,456 by the jury, for which sum, with costs, judgment was entered. The Singer Company sued out a writ of error and the case was removed to the circuit court of appeals for the ninth circuit, where the judgment was affirmed. (*Singer Manufacturing Co.* vs. *Cramer,* 109 Fed. Rep., 652.)

Thereafter the Singer Company applied to this court for a writ of *certiorari,* which writ was granted, and the case is now before this court for hearing upon said writ.

The controversy between the parties is one of long standing. In 1893 Cramer commenced an action at law for infringement of his patent, in the circuit court for the northern district of California, against the Singer Manufacturing Company and its local agent, Willis B. Fry, jointly. (Rec. 347.) The Singer Company interposed a demurrer to the declaration on the ground that the court had no jurisdiction over said corporation for the reason that it was created under the laws of New Jersey, and could not, therefore, be legally sued in the northern district of California. (Rec., 349.) This demurrer was argued before Mr. Justice McKenna, then circuit judge for

the northern district of California, and by him sustained on November 27, 1893. (*Cramer* vs. *Singer Manufacturing Co.,* 59 Fed. Rep., 74.)

This ruling was in accordance with the law and decisions existing at that time, which exempted a corporation from suit in any other district than that whereof it was an inhabitant. Since then the act of March 3, 1897, defining the jurisdiction of the United States circuit courts in cases for the infringement of patents, has been enacted, authorizing suit to be brought against a corporation either in the district of which it is an inhabitant or in any district where the act of infringement is committed and the defendant has a regular and established place of business with a managing agent in charge thereof.

In the judgment sustaining the demurrer of the Singer Manufacturing Company, above referred to, it was specially provided that the judgment so rendered was "without prejudice to the right of "Cramer to commence another suit for the same "cause of action." (Rec., 351.)

Thereafter the old action proceeded against Willis B. Fry personally and alone, under the title of *Cramer* vs. *Fry,* and after a trial before a jury, resulted in a verdict for the defendant Fry in that case,

under a peremptory instruction from the court to the jury to so find. (Rec., 357.) This was on April 12, 1895. (*Cramer* vs. *Fry,* 68 Fed. Rep., 201.)

Afterwards, on October 8, 1896, in accordance with the permission contained in the judgment in the Fry case, Cramer instituted the present action at law for infringement of his patent against the Singer Manufacturing Company alone in the circuit court for the northern district of California. (Rec., 3.)

In this action the Singer Company interposed as a defense the judgment which had been rendered in favor of Willis B. Fry in the former case of *Cramer* vs. *Fry,* claiming that the same operated in favor of the Singer Company on the ground that Fry was their agent, and that they had defended the suit. (Rec., 22.) The lower court (Judge James H. Beatty, of Idaho, presiding) sustained this defense and instructed the jury to render a verdict for the defendant, which verdict was rendered and judgment entered thereon. (Rec., 24-25.) Cramer then sued out a writ of error and removed the case to the court of appeals for the ninth circuit. On consideration thereof the circuit court of appeals reversed the judgment and remanded the case for a new trial. The ground of reversal was that it did not appear

that the former case of *Cramer* vs. *Fry* had been defended by the Singer Company openly and to the knowledge of the plaintiff so as to constitute an estoppel, and consequently it was no estoppel. (*Singer Manufacturing Co.* vs. *Cramer,* 93 Fed. Rep., 636.)

Application was then made to this court by the Singer Company at the October term of 1899 for a writ of *certiorari,* but the application was denied. (*Singer Manufacturing Co.* vs. *Cramer,* 175 U. S., 725.)

Thereupon the case went back to the circuit court for the northern district of California, and was duly and regularly tried before his Honor Judge Morrow and a jury on April 20, 1900, resulting in a verdict for plaintiff for $12,456. (Rec., 30.) Upon this verdict a judgment was entered, (Rec., 31), and to reverse this judgment the Singer Company sued out a writ of error and removed the case to the circuit court of appeals for the ninth circuit. On a hearing before the court of appeals the judgment was affirmed. (*Singer Manufacturing Co.* vs. *Cramer,* 109 Fed. Rep., 652.)

Thereafter on application of the Singer Company this court granted a writ of *certiorari,* bringing the

case here for review. The case is now before the court for argument on that writ.

It will thus be seen that this controversy in one way and another has been pending in the courts for ten years. There have been three separate trials before juries, two appeals to the court of appeals and two applications to this court for writs of *certiorari*. In his charge to the jury the learned judge of the lower court said:

"I desire that the trial of this case shall dispose "of the controversy between the parties with re- "spect to this subject matter, and I do not desire to "pass over any question without very carefully and "very fully considering all the matters involved, "so that whatever may happen hereafter it may dis- "tinctly appear that the court has considered the "question in every possible phase."

We reiterate the wish expressed in the above quotation, and trust that this court will affirm the judgment in question, and thereby put an end to this tedious and long-drawn-out litigation.

The bill of exceptions contains sixty-nine assignments of error, and inasmuch as we do not at this time know which of these will be relied on, it will be necessary for us to consider them all. We shall endeavor, however, to lighten the labors of the court

as much as possible by bunching these assignments of error and treating them in groups, rather than singly, wherever this can be done.

So grouping them they may be divided as follows:

1. Exceptions to refusal of the court to instruct the jury to render a verdict for the defendant, embodied in assignments 11 and 12.

2. Exceptions to the admission and rejection of evidence, embodied in assignments 1, 2, 3, 4, 5, 6, 7, 8, 9, and *10.*

3. Refusal of the court to instruct the jury that a witness false in one part of his testimony is to be distrusted in others, embodied in assignment 13.

4. Exceptions on the subject of the Diehl patent as evidence, embodied in assignments 36, 37, 40, 41, 42, and 64.

5. Exceptions relating to the question of damages, embodied in assignments 24, 25, 66, 67 and 68.

6. Exceptions to instructions given and refused on minor points, embodied in assignments 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 38, 39, 43, 44, 45, 46, 47, 48,

49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, and 65.

These matters we now take up *seriatim*. For convenience, we shall in this brief refer to the parties as they were designated in the trial court—Cramer as *plaintiff*, and the Singer Manufacturing Company as *defendant*.

I.

EXCEPTIONS TO THE REFUSAL OF THE COURT TO INSTRUCT THE JURY TO RETURN A VERICT FOR DEFENDANT, RAISED BY ASSIGNMENTS OF ERROR 11 AND 12.

It appears from the bill of exceptions that *at the close of the plaintiff's case* counsel for defendant requested the court to instruct the jury to return a verdict for the defendant upon the following grounds:

"1. *For the reason that said claim 1 of the pat-*
"ent does not cover any patentable invention.
"2. *Because no infringement has been proved.*
"3. *Because there is no evidence whatever of any*
"damages sustained by the plaintiff." (Rec., 194.)

This motion was denied, but no exception was taken, and the defendant then offered evidence in defense of the action on the merits.

Under these circumstances there was no reversible error in the refusal of the court to direct a verdict *at the close of the plaintiff's case.*

Accident Ins. Co. vs. *Crandall,* 120 U. S., 530.
Northern Pac. R. R. vs. *Mares,* 123 Id., 713.
Robertson vs. *Perkins,* 129 Id., 236.
Columbia vs. *Hawthorne,* 144 Id., 202.

Afterwards, and at the close of the whole case, counsel for defendant moved the court "to instruct "the jury to find a verdict for the defendant upon "the ground that no infringement whatever has been "shown." (Rec. 394.)

And prior to the submission of the case to the jury counsel for defendant requested the court in writing to instruct the jury:

"*In this case you are instructed that under the con-*
"*struction of the patent as given by the court, no in-*
"*fringement exists, and your verdict must be for*
"*the defendant.*"

Both of the above requests were denied and exceptions taken. (Rec., 400.) These exceptions constitute Assignments of Error 11 and 12. (Rec. 437), and they challenge the correctness of the court's ruling in refusing to instruct the jury to return a ver-

dict for defendant on the ground that "no infringe-
"ment whatever has been shown."

Did the court err in refusing to give such instructions?

This brings up the much discussed question of when a Federal court is justified in directing a jury to return a verdict a particular way. It is not questioned that the court has the power to do this in a proper case; but at the same time it must be conceded by all that it is a power which will not be exercised arbitrarily nor in any other than the plainest case.

Article VII of the Federal Constitution guarantees to litigants in action at law the right of trial by jury, according to the principles of the common law, and provides that no fact tried by a jury shall be otherwise re-examined in any court of the United States than according to the rules of the common law. The revised statutes of the United States (Section 4919) confer on patentees the right to recover damages for infringement of their patents by the common-law remedy of an action on the case. Hence the right to a trial by jury in an action at law for the infringement of a patent is a constitutional

right, which it is the policy of the law to jealously guard and protect.

In the case of *Coupe* vs. *Royer,* 155 U. S., 557, Mr. Justice Shiras said:

"This court has had occasion more than once to "reverse the trial court for taking away from the "jury the question of infringement."

And in *Tucker* vs. *Spalding,* 13 Wall., 455, Mr. Justice Miller said:

"Whatever may be our personal opinions of the "fitness of the jury as a tribunal to determine the "diversity or identity in principle of two mechani- "cal instruments, it cannot be questioned that when "the plaintiff, in the exercise of the option which the "law gives him, brings his suit on the law, in pref- "erence to the equity side of the court, that question "must be submitted to the jury, if there is so much "resemblance as raises the question at all."

Mr. Justice Bradley gave expression to the same thought in *Bischoff* vs. *Wethered,* 9 Wall., 814; and in the very recent case of *Patton* vs. *Texas and Pacific Railway Co.,* 179 U. S., 660, Mr. Justice Brewer said:

"It is undoubtedly true that cases are not to be "lightly taken from the jury; that jurors are the "recognized triers of questions of fact. * * *

" Hence it is that seldom an appellate court reverses " the action of a trial court in declining to give a " peremptory instruction for a verdict one way or " the other."

Therefore, the petitioner in this proceeding must make out a very strong case before it can hope to persuade this court that the learned judge of the lower court should have peremptorily ordered the jury to find a verdict for the defendant and thereby deprive Cramer of his constitutional right to a trial by jury.

It will be observed that the instruction was requested solely on the ground that no infringement had been shown. In other words, the contention of our adversary is that the court should have compared the defendant's machine with the plaintiff's patent in order to determine whether it came within the claim of the patent, and having determined that it did not, should have told the jury to find accordingly. We submit that it would have been usurping the function of a jury for the court to have followed this course. Ordinarily the question of infringement is purely one of fact, and as such must be submitted to the jury. It is true that the question of infringement depends primarily upon the scope of

the patent claim, and that it is the province of the court to construe the claim and to tell the jury what it covers. Having gone that far, the power of the court ceases, and then it becomes the province of the jury to say whether or not defendant's structure falls within the patent claim as construed by the court.

The law is very clearly stated in *Curtis on Patents,* at Section 469, where it is said:

"The question of infringement is a question "whether the invention of the defendant is substan- "tially the same as that of the plaintiff. The iden- "tity of two things is a matter of fact depending "upon evidence; and although it is to be de- "termined under the guidance of those principles "which determine what constitutes identity and di- "versity in the sense of the patent law, yet it is for "the jury to determine, as matter of fact, under "proper instructions, whether the two things are the "same or different. This is true even where there "is no dispute as to the particular process or ma- "chine employed by the defendant, but only wheth- "er that process or machine is an infringement. *The "court cannot compare the plaintiff's invention with "that which is used by the defendant and say that the "two are identical.*"

And in *Robinson on Patents,* Vol. 3, page 378, it is said:

"Where the defense denies that the invention used "by the defendant is identical with that included "in the plaintiff's patent, the court defines the pat- "ented invention as indicated by the language of "the claims; the jury judge whether the invention "so defined covers the art or article employed by "the defendant."

This quotation from Robinson was cited and approved by this court as a correct statement of the law in the case of *Coupe* vs. *Royer*, 155 U. S., 579.

Such has been the law laid down by this court in patent cases from the earliest day. Thus in *Battin* vs. *Taggert*, 17 How., 84, which was decided half a century ago, the lower court had instructed the jury to find a verdict for the defendant. In reversing the case for that error this court, through Mr. Justice McLean, said:

"This, as well as the two instructions above no- "ticed, took from the jury facts which it was their "province to examine and determine. It was the "right of the jury to determine from the facts in the "case whether the specifications, including the "claims, were so precise as to enable any person "skilled in the structure of machines, to make the "one described. This the statute requires, and of "this the jury are the judge. The jury are also to "judge of the novelty of the invention, and whether "the renewed patent is for the same invention as the

"original patent; and they are to determine wheth-
"er the invention has been abandoned to the public.
"There are other questions of fact which come with-
"in the province of the jury, such as *the identity of*
"the machines used by the defendant with that of the
"plaintiff, or whether they have been constructed
"and act on the same principle."

In *Bischoff* vs. *Wethered,* 9 Wall., 812, an action was brought to recover damages for the violation of a covenant as to the validity of a patent sold by the defendant to the plaintiff. The plaintiff contended that the patent was invalid because of anticipation by another patent, and he requested the court to construe the two patents and instruct the jury to render a verdict for plaintiff on the ground that they were identical, and therefore that the earlier anticipated the latter. This raised the same proposition that would be raised by the request of a defendant in an action at law for the infringement of a patent for an instruction to the jury to find for the defendant on the ground of anticipation. The lower court refused to give such instruction, on the ground that anticipation was a question of fact for the jury to find; and as infringement and anticipation are the reciprocals of each other, that case is pointed au-

thority for the case at bar. In rendering the decision of this court, Mr. Justice Bradley said:

"It is undoubtedly the common practice of the "United States circuit courts in actions at law on "questions of priority of invention, where a patent "under consideration is attempted to be invalidated "by a prior patent, to take the evidence of experts "as to the nature of the various mechanisms or man-"ufactures described in the different patents pro-"duced, and as to the identity or diversity between "them; and to submit all the evidence to the jury "under general instructions as to the rules by which "they are to consider the evidence. A case may "sometimes be so clear that the court may feel no "need of an expert to explain the terms of art or "the descriptions contained in the respective pat-"ents, and may, therefore, feel authorized to leave "the question of identity to the jury, under such "general instructions as the nature of the documents "seems to require. And in such plain cases the "court will probably feel authorized to set aside a "verdict unsatisfactory to itself, as against the "weight of evidence. But in all such cases the ques-"tion would still be treated as a question of fact for "the jury, and not as a question of law for the court. "And under this rule of practice, counsel would "not have the right to require the court, as matter "of law, to pronounce upon the identity or diver-"sity of the several inventions described in the pat-"ents produced. Such, we think, has been the pre-"vailing rule in this country, and we see no suffi-

"cient reason for changing it. The control which "the courts can always exercise over unsatisfactory "verdicts will enable them to prevent any wrong "or injustice arising from the action of juries; "whereas, if the courts themselves were compella- "ble to decide on these often recondite and difficult "questions, without the aid of scientific persons fa- "miliar with the subject of the invention in question, "they might be led into irremediable errors which "would produce great injustice to suitors. We are "disposed to think that the practice adopted by our "courts is, on the whole, the safest and most con- "ducive to justice. It may be objected to this view "that it is the province of the court, and not the "jury, to construe the meaning of documentary evi- "dence. This is true. But the specifications for "patents for inventions are documents of a peculiar "kind. They profess to describe mechanisms and "complicated machinery, chemical compositions "and other manufactured products, which have "their existence *in pais*, outside of the documents "themselves; and which are commonly de- "scribed by terms of the art or mystery to "which they respectfully belong; and these "descriptions and terms of art often require "peculiar knowledge and education to under "stand them aright; and slight verbal variations, "scarcely noticeable to a common reader, would be "detected by an expert in the art, as indicating an "important variation in the invention. Indeed, the "whole subject matter of a patent is an embodied "conception outside of the patent itself, which, to

"the mind of those expert in the art, stands out in "clear and distinct relief, whilst it is often unper- "ceived, or but dimly perceived by the uninitiated. "This outward embodiment of the terms contained "in the patent is the thing invented, and is to be "properly sought, like the explanation of all patent "ambiguities arising from the description of exter- "nal things, by evidence *in pais.*"

The learned justice then proceeds to point out that this same question had undergone much discussion in the courts of England, where the same conclusion had been reached. In the earlier cases there the matter had been viewed differently. Thus, in *Bovill* vs. *Pimm,* 36 E. L. & Eq., 441, the court of Exchequer held that it was a question of law, the facts being undisputed.

And so likewise in the case of *Betts* vs. *Menzies,* 1 Ell. & Ell. Q. B., 990, it was held by the Exchequer Chamber, on appeal from the court of Queen's Bench, that the question was one of law for the court. But after those decisions the case of *Hill* vs. *Evans,* 31 L. J. Ch., 463, came up before Lord Chancellor Westbury, and he reversed the ruling which had been made in the former cases, and delivered an opinion which has ever since been considered an unanswerable authority. Amongst other things he said:

"It is undoubtedly true as a proposition of law "that the construction of a specification, as the con- "struction of all other written instruments, belongs "to the court; but a specification of an invention "contains, most generally, if not always, some tech- "nical terms, some phrases of art, some processes, "and requires generally the aid of the light derived "from what are called surrounding circumstances. "It is, therefore, an admitted rule of law that the "explanation of the words or technical terms of art, "or phrases used in commerce and the proof and "results of the processes which are described (and "in chemical patents the ascertainment of chemical "equivalents), that all these are matters of fact up- "on which evidence may be given, contradictory tes- "timony may be adduced, and upon which undoubt- "edly it is the province and the right of a jury to "decide."

He then proceeds to point out that it is the duty of the court to construe the specification, and referring to that duty, says:

"But after that duty is discharged there would "remain a most important function to be still per- "formed, which is the comparison of the two instru- "ments when they have received their legal expo- "sition and interpretation; and as it is always a "matter of evidence what external thing is indica- "ted and denoted by any description, when the jury "have been informed of the meaning of the de- "scription contained in each specification, the work

"of comparing the two, and ascertaining whether "the words, as interpreted by the court, contained "in Specification A, do or do not denote the same "external matter as the words, as interpreted and "explained by the court, contained in Specification "B, is a matter of fact, and is, I conceive, a matter "within the province of the jury, and not within "the function of the court. Granting, therefore, to "the full extent, the propriety of the expression of "the rule which is here contained, and taking either "specification as so interpreted, whether the two spe- "cifications that are brought into comparison do or "do not indicate the same external matter, must be "determined by the jury, and not be determined as "a matter of law by the court."

Thereafter, the case of *Betts* vs. *Menzies,* cited above, was appealed to the House of Lords, and the decision of the lower court in that case was reversed, and the ruling that had been made in *Hills* vs. *Evans* was adopted. In there rendering the decision Lord Chancellor Westbury used the following language:

"As the specifications described external objects, "where the language in both specifications should "be identically the same, it would be impossible "to predicate of the two that they described exactly "the same identical external object unless the terms "of art used in both the specifications could be as- "certained to have been the same at the date of "both the patents. The question of identity of sig-

"nification belongs to the province of evidence, not "the province of construction."

Betts vs. *Menzies,* 10 H. L. Cas., 117.

The same generic question has been elaborately considered and ruled on by this court in several cases, the principal ones of which are *Tucker* vs. *Spalding,* 13 Wall., 453; *Keyes* vs. *Grant,* 118 U. S., 25; *Royer* vs. *Schultz Belting Co.,* 135 U. S., 319, and *Coupe* vs. *Royer,* 155 U. S., 557. The one last cited is aptly in point. It was an action at law, tried at Boston, and the defendant requested the court to instruct the jury to return a verdict for the defendant, on the ground of no infringement. There was no dispute as to the character of the defendant's machine, and the request of the defendant was for the court to hold that the defendant's machine did not fall within the scope of the patent claim, and to instruct the jury accordingly. This is identically the question now before the court. The circuit court refused to give the instruction, and while this court reversed the case on the ground that the lower court had not given the proper construction to the patent, it held categorically that upon the new trial which was ordered the case must be submitted to the jury.

Mr. Justice Shiras, in delivering the opinion of the court, said:

"This court has had occasion more than once to "reverse the trial courts for taking away from the "jury the question of infringement, which they have "sometimes done by rejecting evidence of earlier "patents offered to show anticipation, and some- "times by peremptory instruction that a patent re- "lied on by the defense was or was not infringement "of the plaintiff's patent.

"Thus in *Tucker* vs. *Spalding,* 13 Wall., 453, 455, "where an action at law was brought to recover "damages for the infringement of a patent for the "use of removable teeth in saws, and where the de- "fendant offered in evidence, as covering the sub- "ject matter of the plaintiff's patent, a patent prior "in date and invention to that of plaintiff, the ac- "tion of the court below in rejecting this offer of "evidence because, in its judgment, the patent of- "fered did not anticipate the one in suit, was held "to be erroneous by this court, and Mr. Justice Mil- "ler, speaking for the court, used this language: "'Whatever may be our personal opinions of the "'fitness of the jury as a tribunal to determine the "'diversity or identity in principle of two mechani- "'cal instruments, it cannot be questioned that when "'the plaintiff, in the exercise of the option which "'the law gives him, brings his suit on the law, in "'preference to the equity side of the court, the "'question must be submitted to the jury if there "'is so much resemblance as raises the question at

"'all;' and reference was then made to the case of "*Bischoff* vs. *Wethered*, 9 Wall., 812, 814, as one in "which the subject had been fully considered. In "the case so referred to, the subject was discussed "at length, including a review of the English cases, "and the conclusion reached was that, in a suit at "law involving a question of priority of invention, "counsel cannot require the court to compare the "two specifications and to instruct the jury, as a "matter of law, whether the inventions therein de-"scribed are or are not identical. In expressing the "views of the court, Mr. Justice Bradley said: 'A "'case may sometimes be so clear that the court "'may feel no need of an expert to explain the terms "'of art or the descriptions contained in the respect-"'ive patents, and may, therefore, feel authorized "'to leave the question of identity to the jury, un-"'der such general instructions as the nature of the "'document seems to require. And in such plain "'cases the court would probably feel authorized "'to set aside a verdict unsatisfactory to itself, as "'against the weight of evidence. But in all such "'cases the question would still be treated as a ques-"'tion of fact for the jury, and not as a question of "'law for the court.'

"In the case of *Keyes* vs. *Grant*, 118 U. S., 25, 36, "where the defendant set up a prior publication "of a machine anticipating the patented invention, "and where there appeared obvious differences be-"tween the two machines in the arrangement and "relation of the parts to each other, and where ex-"perts differed upon the question whether those dif-

" ferences were material to the result, and where " the court below instructed the jury to return a ver- " dict for the defendants, this court, reversing the " judgment, said, through Mr. Justice Matthews: " ' Clearly it was not a matter of law that the spec- " ' ifications of the plaintiff's patent and the publi- " ' cation of Karsten, taken in connection with the " ' drawings appended in illustration, described the " ' same thing. * * * In our opinion this was a " ' question of fact properly to be left for determi- " ' nation to the jury, under suitable instruction from " ' the court upon the rules of law, which should " ' guide them to their verdict.'

" And in the case of *Royer* vs. *Schultz Belting Co.*, " 135 U. S., 319, which arose upon an alleged in- " fringement of the same patent here in suit, and " where the question was chiefly to be determined " by a comparison of the two machines, this court " held that the circuit court erred in not submit- " ting to the jury the question of infringement un- " der proper instruction.

" The doctrine of the cases is aptly expressed by " Robinson in his work on patents, vol. 3, page 378, " as follows: 'Where the defense denies that the " ' invention used by the defendant is identical with " ' that included in the plaintiff's patent, the court " ' defines the patented invention as indicated by the " ' language of the claims; the jury judge whether " ' the invention so defined covers the art or article " ' employed by the defendant.'

" We perceive no error in the comments of the

" learned judge upon the question whether the plain-
" tiff's patent described a practically useful machine.
" Our conclusion upon this part of this case, there-
" fore, is that the question of infringement, arising
" upon comparison of the Royer patent and the ma-
" chine used by the defendants, should be submitted
" to the jury, with proper instructions as to the na-
" ture and scope of the plaintiff's patent as here-
" before defined, and as to the character of the de-
" fendant's machine."

In the leading case of *Mitchell* vs. *Tilghman,* 19 Wall., 118, we find the following apt language by Mr. Justice Clifford:

" Slight differences in degree cannot be regard-
" ed as of weight in determining the question of sub-
" stantial similarity or substantial difference, but in
" all cases the question whether the difference in
" degree is sufficient or insufficient to prove the al-
" leged infringement is a question of fact to be de-
" termined by the jury in an action at law, or by
" the court in a suit in equity."

In view of the foregoing authorities, it must be conceded by our adversaries that, if there was any evidence whatever on the question of infringement, there was no error in submitting the matter to the jury. We understand, however, their position to be that there was *no evidence whatever* of infringe-

ment, and consequently, that there was nothing to submit to the jury in that regard.

Of course, we understand the rule that when there it no evidence whatever on an issue of fact raised by the pleadings, the decision thereon ceases to be a question of fact for the jury, and becomes a question of law for the court, and in such case it is the duty of the court to direct a verdict. If, in a suit for infringement of a patent on a telephone, the plaintiff should produce as the infringing device a wheel-barrow, we apprehend that no court would go through the idle ceremony of submitting the case to the jury, but would peremptorily direct a verdict. And so likewise if the evidence showed without contradiction that the infringing act was not committed by a defendant, but by another person not a party to the suit, the same rule would obtain. In neither case would there be any evidence of infringement whatever. But where there is any evidence of infringement which, if uncontradicted, tends to show infringement, it is the duty of the court to submit it to the jury, and a failure to do so is error. Accordingly we address ourselves to this question:

Was there any evidence adduced by the plaintiff

which, if uncontradicted, tended to show infringement?

In making a motion to direct a verdict the defendant necessarily concedes the truth of all the evidence adduced by the plaintiff.

In *Parks* vs. *Ross,* 11 How., 362, this court held that the practice of asking an instruction to direct a verdict for defendant had superseded the ancient practice of demurrer to the evidence, and should be tested by the same rules. And in *Pawling* vs. *The United States,* 4 Cr., 219 (followed in *U. S. Bank* vs. *Smith,* 11 Wheaton, 117, and *Merricks Exrs.* vs. *Giddings,* 115 U. S. 300), this court, through Chief Justice Marshall, held that on a demurrer to the evidence "the party demurring admits the truth of "the testimony to which he demurs, and also those "conclusions of fact which a jury might fairly draw "from that testimony."

Therefore, when the defendant moved the court to instruct the jury in this case, it necessarily admitted the truth of all the testimony adduced by the plaintiff on the question of infringement, and also all conclusions of fact which the jury might fairly draw from that testimony. Did that testimony tend to show infringement, and was the jury justified in

drawing the conclusion of infringement therefrom? Or, to put it in another form, would all reasonable men, in the exercise of a sound discretion, necessarily draw from this admittedly true testimony the inference of non-infringement, or might they differ thereon?

The court of appeals put the question in this way:

"Whether or not it was error to refuse the in-
"struction depends upon *whether there was any evi-*
"dence of infringement, which, if credited by the
"jury, would have justified their verdict."

Singer Mfg. Co. vs. *Cramer,* 109 Fed. R., 654.

In this discussion we concede that there must be more than a mere "scintilla" of evidence, because the ancient "scintilla" rule is no longer good law, either in this or the English courts. It was so ruled in the English courts, in *Toomey* vs. *Railway Co.* (3 C. B. N. S., 150); *Jewell* vs. *Parr* (13 C. B., 916); *Ryder* vs. *Wombell* (L. R. 4 Exch., 36); *Giblin* vs. *McMullin* (2 L. R. P. C., 335); *Railway Co.* vs. *Jackson* (3 App. Cas., 903), and probably others.

This court adopted the same view in *Improvement Co.* vs. *Munson* (14 Wall., 442); *Pleasants* vs. *Fant*

(22 Wall., 216), and several others. We, therefore, disavow any reliance on the "scintilla" rule.

But one other remark before proceeding with a discussion of the evidence: Where a motion is made to direct a verdict, the court should consider not only all the facts which the evidence tends to establish, but "all such fair and reasonable inferences "of fact as the jury might lawfully draw from the "evidence."

This was ruled by the court of appeals of the seventh circuit in *New York Dry Goods Store* vs. *Pabst Brewing Co.*, 112 Fed. R., 381, and may be of some moment in the discussion to follow.

We now address ourselves directly to the matter in hand. The sewing machine art constitutes one of the great branches of the world's industries, and as a matter of interest, as well as an aid to a thorough understanding of the state of the art, we venture to preface our argument with certain historical facts. While they do not all appear in the record, they constitute a part of the industrial history of the country, and consequently, this court is entitled to take judicial notice thereof.

HISTORICAL REVIEW OF THE SEWING MACHINE ART.

The sewing machine art practically dates from the invention of Elias Howe, made in 1844. All prior efforts made in that direction had proved abortive. The earliest record we have of anything in the shape of a sewing machine proper is the English patent, No. 1764, granted to Thomas Saint in 1790. Prior thereto, and as early as 1755, embroidery machines had been patented in England; but of these we take no account, as they bear little relevancy to a sewing machine proper. The machine of Thomas Saint was a crude affair, and did not prove a success. In 1830 a patent for a sewing machine was granted to one Thimonnier in France, and about eighty of them were manufactured and put into use for sewing army clothes, near the close of the reign of Charles X, but they were destroyed by a mob, as many other labor-saving machines had been before. The inventor made a second attempt to popularize his machine, but these were destroyed by a second mob, and he barely escaped with his life, and died in poverty in 1857.

The first sewing machine built in the United States was that of Rev. John A. Dodge, a Methodist minister of Monkton, Vermont, in 1818. It was

never patented, and on account of the opposition of the journeymen tailors was abandoned.

Lye came next and secured the first sewing machine patent, in 1826. No records of this machine are extant, as they were all lost in the Patent Office fire of 1836. Hence we do not know what it was.

Between 1832 and 1835 Walter Hunt made a lock-stitch sewing machine, but abandoned it, and nothing ever came of his efforts in that direction.

In 1842 United States Patent No. 2466 was granted to J. J. Greenough for a sewing machine having a double-pointed needle with the eye in the middle, which needle was drawn through the work by a pair of traveling pincers. It was designed for sewing leather, and an awl pierced the hole in advance of the needle. This machine does not appear to have gone into any extensive use.

In the next year, 1843, United States Patent No. 2982 was granted to G. W. Bean for a sewing machine in which the needle was stationary, and the cloth was gathered in crimps or folds and forced over the stationary needle. None of the foregoing devices cut any figure in the art, and hence, may be dismissed from consideration.

This brings us down to 1844, which is the begin-

ning of the great epoch of the sewing machine. In that year Elias Howe commenced his work and made his first crude model. It is a matter of some interest to note that in the same year Thomas Hood published his famous "Song of the Shirt." It is not to be supposed that any relation of cause and effect exists between these two events, but it is probable that if Howe had begun his labors a year or two earlier, one of the great masterpieces of English literature would never have been written.

Howe was too poor to follow up his great invention at that time, but in 1845 he borrowed $500 from a friend, with which to build a machine, for which he agreed to give a half interest in his invention. The machine was completed in 1845, and in July of that year Mr. Howe sewed two suits of clothes on it, one for himself and one for his friend who contributed the $500. This furnishes the first instance in history of a suit of clothes made on a sewing machine. Notwithstanding this success, Howe met with great difficulties, the main one being opposition from the journeymen tailors. He improved the machine in many particulars, and built a second one, which formed the basis for a patent.

This patent was granted by the United States on September 10, 1846, and is numbered 4750.

It is commonly supposed that Howe's fundamental invention consisted in placing the eye in the point of the needle; but this is a popular error. The eye in the point of the needle had been patented in England in 1841, by Newton and Archbold, and had been used for at least eight years prior thereto, in the United States. The Howe needle was a curved one, and was carried at the end of a pendant vibrating lever, which had a motion similar to that of a pick-ax in the hands of a workman. The needle took its thread from a spool situated above the lever, and the tension on the thread was produced by a spring-brake, with a semi-circular end, which bore upon the spool, the pressure being regulated by a vertical thumb-screw. The work was held in a vertical plane by means of a horizontal roll or pin projecting from the edge of a thin metal plate called a "baster-plate," to which an intermittent motion was given by the teeth of a pinion. Above and a little to one side of said plate was the shuttle-race, through which the shuttle carrying the thread was driven by two strikers operated by two arms and cams located on the horizontal main shaft.

The machine contained no treadle, but was driven by a crank-wheel turned by hand.

The Howe machine as originally built bears but little resemblance to any of the modern appliances, but it embodies the three fundamental features of all practical machines, viz., the grooved needle with the eye in the point, a lock-stitch mechanism, and an automatic feed.

Unable to introduce the invention in the United States, Howe went to England with his machine, but met with no success there. On his return to the United States some years later he found that his invention had been taken up by infringers and that sewing machines embodying the same were being built and sold indiscriminately. This necessitated litigation. The infringers thought to break his patent by seeking to prove that the invention was anticipated by the abandoned experiment of Hunt in 1834, heretofore referred to; but in this they failed. The first two cases involving the patent were decided in 1851 and 1852, but are not in the reports. Those of which we have recorded reports are *Howe* vs. *Underwood* (1 Fish, 160); *Howe* vs. *Morton* (1 Fish, 586), and *Howe* vs. *Williams* (2 Fish, 395). Howe won all of his suits and the infringers were

compelled to pay a royalty of $25 on each machine. In six years these royalties increased from $300 to $2,000 per annum, and in 1863 the royalties were estimated at $4,000 per day. His patent expired in 1860, and was in that year extended by Congress for seven years. He applied for a second extension, which was denied. In his application for this second extension he admitted receiving $1,185,000; but claimed that the invention was worth $150,000,000.

In connection with the development of the sewing machine the name of A. B. Wilson, founder of the great firm of Wheeler & Wilson, stands next in rank to that of Howe. Wilson invented the rotary hook carrying a bobbin, which took the place of the reciprocating shuttle. This was patented to him June 15, 1852, as No. 9041. He also invented the still more important improvement of the "four-motion feed," which is the characteristic feature of nearly all practical family machines.

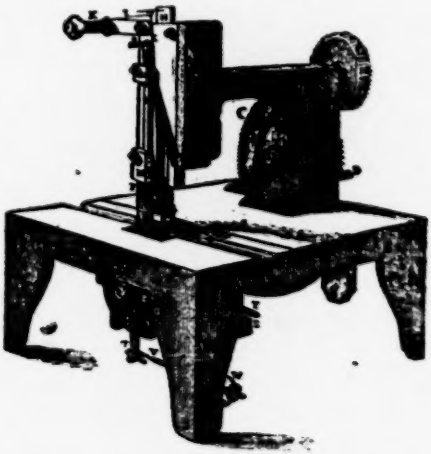
Contemporaneously with the Wheeler & Wilson machine came the Singer, patented August 12, 1851, as No. 8294, by Isaac M. Singer. Mr. Singer was an ingenious mechanic, and he entered into a contract to invent and build a new sewing machine for $40. This feat he accomplished in twelve days.

The characteristic feature of his machine was the vertical standard, with horizontal arm above the work table, which was afterwards adopted in nearly all of the other sewing machines. It is a valuable feature and is the prototype of the corresponding portions of the modern machine. Mr. Singer was the first in the art to apply to the sewing machine a treadle for actuating it by foot power in place of the hand-driven crank wheel; but he took out no patent for this feature. A cut of the original sewing machine is shown on the opposite page. The treadle is not shown, but is supposed to be connected with a pitman attached to the pin marked "D." The machine as shown in the cut is supposed to be placed on the top of a table, and the pitman, attached to the pin D, is extended downward to the bottom of the floor, where it is attached to a treadle. This treadle mounting was similar to that of an ordinary grind-stone. The operator stood upright and worked the treadle by one foot.

Following the Singer came the Grover & Baker, the Wilcox & Gibbs, the Weed, the Domestic, the Florence and others.

In 1856 the sewing machine manufacturers met at Albany, and by an agreement known as the "Al-

Original Singer Machine, 1851.



bany Agreement," all the then existing sewing machine patents were combined and formed into the famous "Sewing Machine Combination," which is perhaps the first instance in our history of a technical "trust." This trust included Howe, Wheeler & Wilson, Grover & Baker, and I. M. Singer & Co. The combined output of the trust for one-quarter of a centry, up to 1877, was over half a million machines per annum.

Of course many subsidiary patents were granted during that period of time, covering various parts of machines, such as hemmers, tuckers, fillers, quilters, binders, gatherers, rufflers, etc. But strange as it may appear, very little progress in the way of invention relating to the treadle was made prior to 1880. The fundamental patents on the machine expired in 1877, and although over seven thousand sewing machine patents have been granted by the United States, up to 1880 there were only two known methods in use for mounting the treadle. One method consisted in mounting it in the legs, and the other on the tie-rod by means of cones and set-screws. The only United States patent in this record relating to treadles prior to 1880 was that of Wilcox, of 1870 (Rec. 214) in which the treadle was mounted

on knife-edge bearings in the legs of the machine, which machine had no vertical double brace at all. It is a little singular that the advance in the art in the matter of treadle mountings was so slow, in view of the fact that the old treadle mountings prior to 1880 were so defective. Nevertheless, the fact remains, beyond all shadow of a doubt, that prior to 1880 the only treadle mountings known or in existence were the two which we have already referred to, and in both of them there was a known defect, apparent to all and crying loudly for a remedy. Cramer was the one who invented the remedy for that defect, which remedy consists in removing the treadle from the legs and the tie-rod and mounting it in the vertical double brace, where it could not possibly get out of line and would enable the machine to continuously run smoothly and without any binding. When once adjusted, this device remains so, practically as long as the machine lasts, and the constant annoyance of faulty alignment, with all its attendant evils, is obviated.

It may be that this fundamental invention of Cramer's, as shown in his patent, is not embodied in the most approved form of mechanism as viewed by the art of the present day. But this was the

case with all the great sewing machine inventions. Compare the cut of Singer's first machine, heretofore referred to in this brief, with the present improved Singer machine, and we learn an instructive lesson. It is almost impossible to recognize in the beautiful Singer machine of 1903 the crude and cumbersome device shown by the cut opposite page 36 of this brief. And yet the three fundamental elements of that cut are found in the present Singer machine, and beyond all question place Mr. Singer in the ranks of meritorious inventors, in respect to those three features of the machine. We think that Mr. Cramer stands in the same category regarding that feature of a sewing machine which he invented, and while he may not be entitled to as exalted a position in the art as Howe, Wilson and Singer, yet it cannot be denied that he must be considered a pioneer in regard to treadle mountings, and as such is entitled to great consideration.

We advance now to a more detailed consideration of the mechanism of a sewing machine in general, preparatory to a consideration of the Cramer invention.

MECHANISM OF SEWING MACHINES IN GENERAL.

A modern sewing machine consists of three separate groups of instrumentalities: A sewing mechanism, a stand, and a driving mechanism. Concerning the first of these there is no controversy in this case, as the patent does not relate to that part of the machine. The stand consists of a top, two side pieces (commonly called the legs), and a double vertical brace binding the two sides together and thereby forming a substantial frame-work. The driving mechanism consists of a treadle, a band-wheel, a pitman connecting the treadle and band-wheel, a driving shaft, and a belt connecting said shaft with the band-wheel. The power is applied by the foot of the operator to the treadle, which oscillates up and down on some kind of bearing or pivot; this causes a rotation of the band-wheel through the medium of the pitman, and the belt on the band-wheel drives the shaft attached to the sewing mechanism, through the instrumentality of gearing, and this causes the vertical reciprocating motion of the needle, whereby the sewing is effected.

These separate parts are manufactured at the central factory of the company and sent in a knock-down form to the various agencies throughout the

country, where they are assembled together for sale. Great care is required in assembling the parts in order to get them truly in line.

The Cramer invention relates particularly to the treadle. Prior to the date of his invention, which was June, 1880, a great many improvements had been made in the sewing mechanism and in other parts of a sewing machine, but very little if any, improvement had been made in the treadle, and Cramer addressed himself to that part of the machine. It is essential to the perfect operation of the treadle that its bearings should always remain in true alignment at a fixed distance apart. If these bearings should get out of line, the entire driving mechanism would be affected, and the machine would not act properly. The different parts would "bind," and the machine would run hard with a rattling noise.

Prior to the Cramer invention it was customary to mount the treadle either upon the tie-rod connecting the two legs together, or upon bearings placed in the two legs themselves. Cramer noticed that in both cases the bearings became loose from excessive wear and would not remain rigidly in line at a fixed distance apart. After much study on the

subject he conceived the idea of mounting the treadle directly in the vertical double brace instead of in the legs or on a rod connecting the legs together. That mode of mounting the treadle had never been adopted before, and Cramer was the first in the art to so mount a sewing machine treadle. In its broadest conception his invention consists in mounting the treadle in the vertical double brace by some kind of appropriate bearings.

THE CRAMER PATENT.

For the convenience of the court we herewith reproduce, on adjoining page, the drawing of the Cramer patent, slightly amplified in a few details in order to insure a clearer understanding of the same. The specification of the patent is as follows:

"SPECIFICATION forming part of Letters Patent No. 271,426, "dated January 30, 1883."

"Application Filed May 25, 1882. (No Model.)

"To all whom it may concern:

" Be it known that I, HERMAN CRAMER, of So-
" nora, in the county of Tuolumne and State of Cali-
"fornia, have invented a new and Improved Sewing
" Machine Treadle; and I do hereby declare that

Cramer Patent Drawings.

Fig. 1.

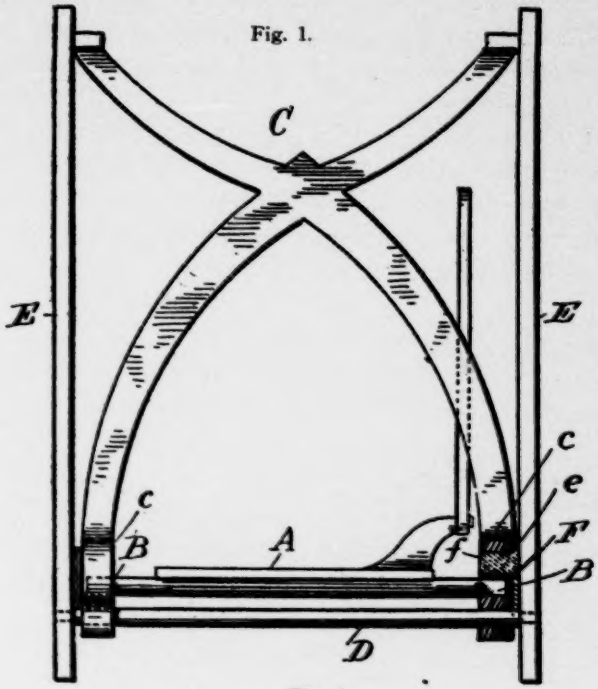


Fig. 2.

" the following is a full, clear, and exact description " of the same, reference being had to the accom- " panying drawings, forming part of this specifica- " tion.

" My invention relates to improvements in the " bearings of sewing machine treadles; and it has " for its object to provide means, first, to keep the " treadle-bearings rigidly in line and at a fixed dis- " tance apart to avoid friction, and, second, to make " its movement in use noiseless.

" To this end my invention consists in the construc- " tion and combination of parts hereinafter fully de- " scribed and claimed, reference being had to the " accompanying drawings, in which—

" Figure 1 is a perspective view of a portion " of a sewing machine, showing my invention. Fig. " 2 is a transverse vertical section through one bear- " ing of the treadle.

" A represents the treadle, provided with the usual " pitman connection by which to run the sewing ma- " chine wheel.

" B represents the two trunnions, cast as a portion " of the treadle and extending from its sides into " loop-holes in the common cast-iron cross-brace, C. " These trunnions are sharpened to an edge or cor- " ner along their lower sides, and the lower end of " the loop-hole is hollowed to an angle more obtuse " than the edge of the trunnion, to serve as a bearing " for the same and permit the rocking motion com- " mon to treadles.

" C represents the usual cast-iron double brace " connecting the two end legs diagonally in a plane

" generally vertical. The lower ends of this brace " are secured directly to the web of the legs by bolts " *d*, and for convenience and strength I make the two " ends of the common cross-bar, D, serve as these " bolts. The upper ends of the brace are secured, " as usual, either to the web of the legs or to the table " of the machine, near the legs.

" The treadle and its trunnion bearings are wholly " independent of the cross-bar D, except its service, " as stated, to hold the brace to the legs. The bear- " ing-holes in the brace are formed into long verti- " tical loops to permit the entrance of the treadle.

"Pieces of leather, F, or other soft material cover " the top and end of each trunnion, to serve as cush- " ions to keep the same close in its bearing, to pre- " vent the noise which would result were the trun- " nions permitted to bounce and thump endwise, " when the treadle is in motion. The leather F is " fitted to the curve of the upper side of the trun- " nion, which is an arc of a cylinder whose center of " oscillation is the lower edge of the trunnion. The " same leather also interposes between the end of " the trunnion and the adjacent iron. *f* is a block " serving as a mere backer, to which the cushion F " is attached. This block conforms to the back and " top side of the cushion and fills the loop-hole in the " brace above the trunnion. It also has tangs or pro- " jections *e*, resting in suitable recesses in the brace " C, which are held between the brace and the web " of the leg E, by which means the block and cush- " ion are held in place.

" Below the bearings of the trunnions B, I provide

"cups M, attached to the ends of brace C, to catch "the oil that usually drips from such bearings. By "this construction my treadle-bearings are rigidly "fixed, and in no way liable to get out of line or to "require adjustment. The usual noise is prevented "and overflowing oil is caught before it can do dam- "age.

"I am aware that sewing machine treadles have "before been provided with V-shaped bearings, and "I do not claim the same as my invention; but

"What I claim, and wish to secure by Letters Patent, is—

"1. The vertical double brace joining the legs "of the two ends of a sewing machine, provided with "holes through its lower extremities to serve as "bearings, in combination with a treadle provided "with trunnions fitted to oscillate in said bearings, "substantially as specified.

"2. The sewing machine legs E, the vertical "double brace C, secured thereto and provided with "holes to serve as bearings for the treadle A, and "the treadle provided with trunnions B to oscillate "in said bearings, in combination with the cushion "F and the block *f*, as and for the purpose specified.

"HERMAN CRAMER.

"Witnesses:

"FRANK W. STREET,

"CHARLES L. STREET."

The controversy in this case relates solely to claim 1 of this patent. The second claim thereof relates to the mufflers made of leather, or other soft mate-

rial, attached to the bearings to prevent noise, and is not charged to be infringed.

The statement of invention found in the specification is as follows:

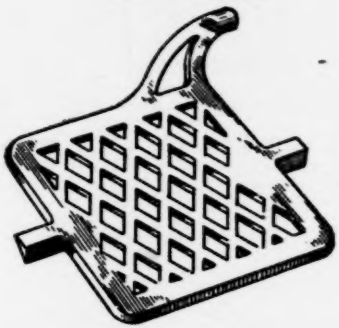
"My invention relates to improvements in the "bearings of sewing machine treadles; and it has "for its object to provide means, first, *to keep the "treadle bearings rigidly in line and at a fixed dis-"tance apart to avoid friction;* and, *second,* to "make its movement in use noiseless."

Claim 1 of the patent has reference to the first, and claim 2 has reference to the second of the above specified objects.

It will be seen from the patent that the Cramer treadle is provided with lugs or projections on each side made integral therewith, and that this treadle is mounted directly in the double vertical brace. The form of mounting shown and described consists of what is commonly called knife-edge bearings. A V-shaped hole or seat is made in the lower end of the vertical brace, and the under edges of the trunnions attached to the treadle are sharpened in the form of a knife-edge and rest in the V-shaped seats. As the treadle oscillates by the motion of the foot, the knife-edges rock back and forth in the V-shaped seats.

The Cramer invention does not relate to the particular form of bearing used, for he distinctly states in his patent that he does not claim the knife-edge bearings, inasmuch as that form was old in sewing machines at the date of his invention. The following cut will clearly show the specific form of Cramer's treadle described in his patent:

Cramer's Treadle.



The claim which he does make reads as follows:

"The vertical double brace joining the legs of the "two ends of a sewing machine provided with holes "through its lower extremities to serve as bearings, "in combination with a treadle, provided with trun- "nions, fitted to oscillate in said bearings substan- "tially as herein described."

The proper construction of this claim is dependent upon the scope of the actual invention made, in view of the state of the art. It will be necessary,

therefore, to advert to the prior art as it existed at the date of the Cramer invention, and the first point for consideration will be the actual date of that invention.

DATE OF THE CRAMER INVENTION.

The date of the Cramer invention is June, 1880. This must be taken as a fact proven beyond all doubt. Cramer testifies that in the middle of June, 1880, he "had the thing all built in perfect models, " perfect working models, just as perfect as they are " to-day." (Rec., 40.) He began making and selling the machines in 1881, the first one put on the market having been made at Sonora in January, 1881. (Rec., 41.)

Mrs. E. S. Abbott corroborated this testimony and produced and put in evidence several cardboard models embodying the invention, bearing on them the date June, 1880, in Cramer's handwriting. She testified that in June, 1880, under the direction of Mr. Cramer, she made those models for him. They were put in evidence and marked "Plaintiff's Exhibit T." (Rec., 153-4, 157.)

Mr. Cramer also testified positively as to the making of these models in June, 1880, saying that they

were made at that time and the inscription was written on them at the same time. (Rec., 192.)

No attempt whatever was made to contradict this testimony. But even if there had been, the motion of defendant for a verdict would necessarily concede the truth of Cramer's testimony on this writ of error. Consequently, it must be taken as a proven fact that the date of the invention was June, 1880.

Starting with June, 1880, as the date of Cramer's invention, what was the state of the art at that time?

THE STATE OF THE ART.

There is not a pretense of dispute on this point, for the record shows conclusively that prior to said date sewing machine treadles had been mounted in two, and only two, ways, viz: in the legs and on the tie-rod usually connecting the legs. The oral testimony on this point is clear and convincing.

Cramer testifies to it at pages 38-41.

Expert witness L. W. Seely testifies to it at page 120.

Expert witness A. C. Brown, with a practical experience of twenty-seven years in the sewing machine business, testified to the same effect at pages 160-1.

Herman Cramer, Jr., testified on the subject at pages 175 *et seq.*

All of this testimony must be taken as true. The testimony of the defendant's witnesses shows that practically all the sewing machine companies in the United States were mounting their treadles either in the legs or on the tie-rod prior to June, 1880. Not one of them mounted the treadle in the vertical double brace.

The defendant company mounted its treadles in the legs of the machine at that time. (Rec., 291.) It was not until after the date of the Cramer patent that they changed this mounting to the double vertical brace.

It will be necessary to examine a little more in detail these two old styles of mounting, which constituted the prior art.

The principal one of these two was the mounting on the tie-rod. This rod, used as a tie or brace, usually connected the two sides or legs together and also served as a seat for the treadle. The most usual way was to cast the treadle with a lateral groove through its center and a boss, hub or projection at each end of the groove, with a hole through the same, which hole was funnel-shaped at the outer end, as represented

by the cuts following, made from plaintiff's exhibit E, which represent the treadle removed from the tie-rod, one being a perspective view and the other a vertical cross-section.

Old Style Treadle With Cones and Rod Removed.

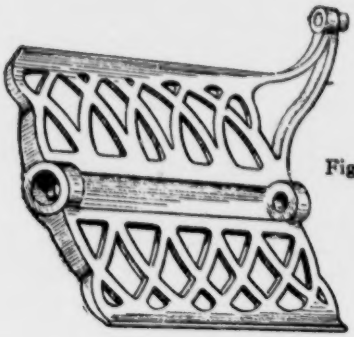


Fig. 1.

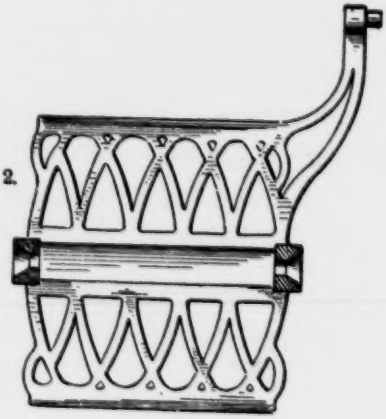


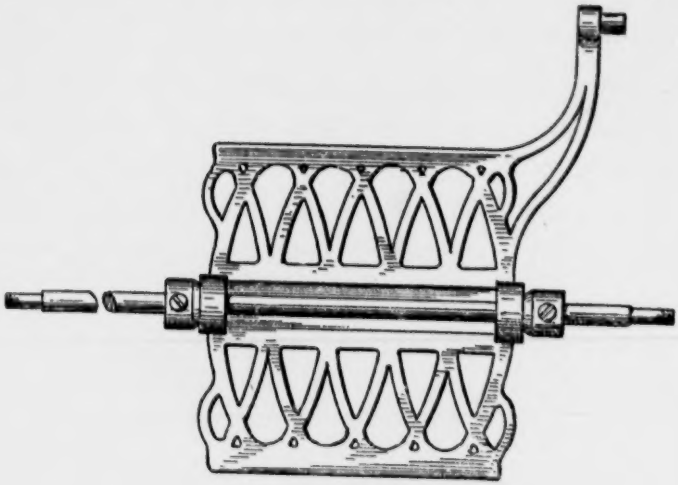
Fig. 2.

This treadle was strung on to the tie-rod. That is to say, the rod was passed through the two holes in the bosses and lay snugly in the groove of the treadle. Conically pointed collars with set-screws styled in the art "cones," were then made of the following form:

Cones.

After the treadle was strung on to the rod and placed in the proper position, these conical collars were passed over the rod at each end and their conical ends were fitted snugly into the countersinks of the holes in the bosses of the treadle, after which the set screws were tightened, so as to hold the treadle in position, as represented by the following cut:

Old Style Treadle.
Cones in Place.



This treadle oscillated on these cones as bearings.

This construction was liable to serious objection. The constant oscillation of the treadle would cause the face of the cones to wear away from friction, and the set screws holding the cones in place would get loose. The result would be that the treadle bearings were no longer rigidly in line and the treadle, being loosened from its bearings, would slip endwise on the rod at every impulse, thereby causing the different parts of the driving mechanism to get out of line, and the machine to "bind" and run "hard." At the same time an incessant rattling noise was pro-

duced by the slipping of the treadle back and forth on the rod. When this result was reached it became necessary to loosen the set screws, move up the cones to a new position and fasten them there by tightening the set screws. The machine would then work until the cones and set screws again wore loose, when the re-setting operation would have to be repeated. Finally, when the cones wore to such an extent that they could not be re-set, they were thrown away and a new set provided. The re-setting of these cones was a delicate operation, requiring great care and judgment. If they were set too tight the treadle would not oscillate, and the cones themselves were liable to crack. If they were not set tight enough, the treadle would slip and rattle, causing the troubles referred to above. Hence it required somewhat of an expert to set and re-set these cones correctly. The average operator of a sewing machine is not such an expert.

A modification of this form of mounting was sometimes used, shown in the cuts on adjoining page.

In this method the cones are dispensed with and a collar having a V-shaped loop is substituted. The ends of the treadle rod are knife-edged and they are fitted into the V-shaped seats, thereby presenting the

Old Style Treadle Mounted on Rod With Knife-Edge Bearings.

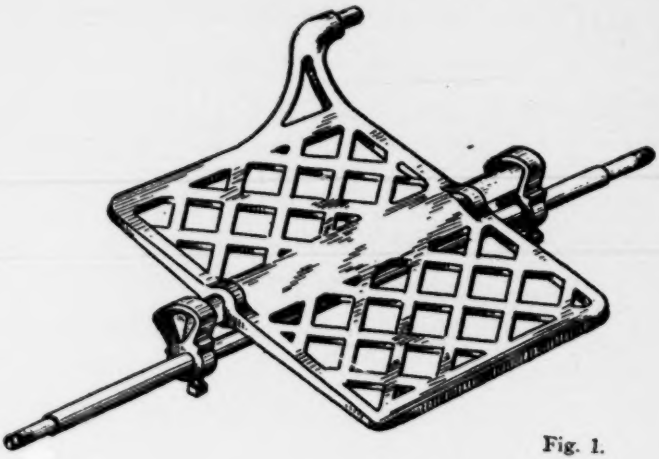
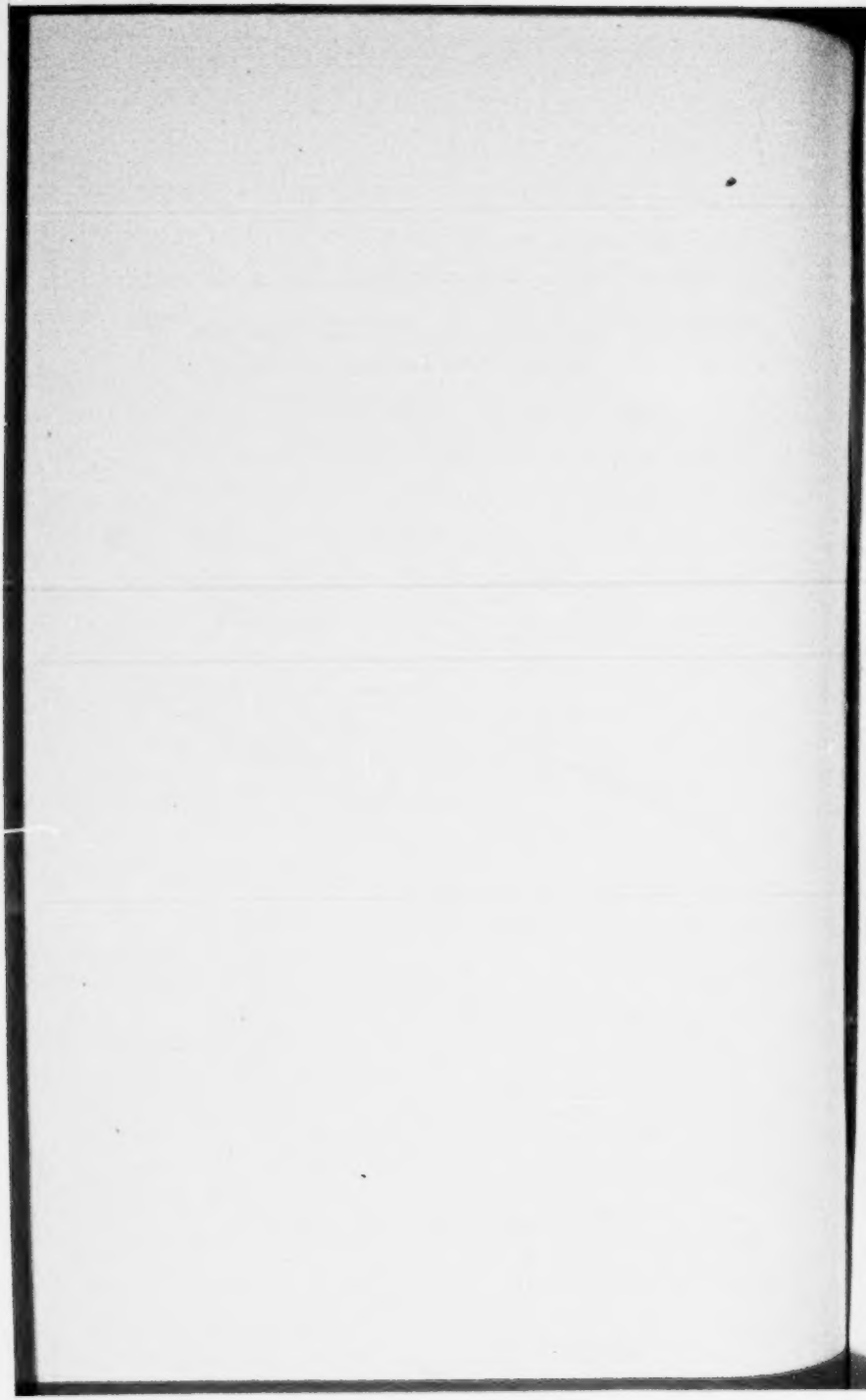


Fig. 1.

Fig. 2.



case of a treadle mounted by knife-edge bearings on the tie-rod.

This form of mounting was liable to the same objections as that of cones and set screws. In fact, it was even inferior and possessed some defects not inherent in the cone and set screw method.

This second method of mounting the treadle, to wit: in the legs or side pieces, is illustrated in the Wilcox patent of 1870. (Rec., 214.) It was liable to very serious objections.

The constant downward pressure on the treadle has a tendency to cause the legs to spread apart, and as soon as that occurs the parts get out of alignment. If, however, the legs should be so tightly braced as to resist the tendency to spread, then the treadle rod itself would tend to bend downward, thereby becoming crooked and causing the machine to bind and run hard.

An illustration of the bending of a treadle rod by pressure of the foot was furnished by defendant's witness Jackson, who produced an old treadle-rod bent entirely out of shape by the constant pressure of the foot on the treadle. (Rec., 304.)

The mounting of the treadle in the legs was quite as objectionable as mounting on the tie-rod; for,

while it did away with the cones and set screws, it caused the other defect of spreading the legs, which always results in throwing the machine out of alignment and causing it to run hard and to bind.

The record furnishes plenary proof of the foregoing, as will be seen by the following references. Herman Cramer testified as follows:

"I kept experimenting on machines continually. "* * * I noticed that if I could only overcome "that difficulty of the treadle, it would be a fortune "to me. In fact all the machines had that trouble. It "(the treadle) would continually get loose and out "of line and the action of the foot would spread these "legs, and when spread, they would flop on the bar "backwards and forwards. (Rec., 38.) When this "treadle worked backward and forwards on this "rod, it would spread the cones and work them "loose. They were continually working loose. "That was the style of making the treadle "that was in use prior to the time I got my inven-"tion. (Rec., 39.) The bearings would get loose "in the side of the legs and turn over. They would "not stay in line; they would work out of line, never "in line—they would work loose from the screws "that held them to the bar. There was more diffi-"culty in that direction than anything about a sew-"ing machine—it gave me more trouble than any-"thing else. That difficulty was common to all sew-"ing machines I knew of at that time . (Rec., 40.) "When the treadle worked backward and forwards

"on the rod, it would spread the cones and work "loose. They were continually working loose." (Rec., 39.)

The plaintiff's expert witness, L. W. Seely, testified as follows:

"Before the time of Mr. Cramer's invention it was "usual to mount these treadles upon a tie-rod which "extended across between the legs at the bottom, and "in order to provide a bearing for the treadle, col- "lars of cone-shape were mounted on this rod, "which engaged with sockets in the end of the "treadle, and these collars were held in place by set- "screws, which are simply screws passing through "the collar and bearing upon the rod. The treadle "did not oscillate upon the rod directly, but upon "these collars. The bearing is not upon the rod, but "upon the cones, and the construction is the same at "both ends of the treadle. If these cones are prop- "erly placed and are held tightly in position, the "treadle will rock upon them and operate correctly. "But any collar held by a set-screw on the shaft is "liable to work loose when the part which moves "upon it is subjected to long continued use or oscil- "lation. And as soon as these collars work loose the "treadle becomes loose, rattles, shakes endwise, and "the bearings are no longer at a fixed distance apart. "That was the common style of treadle bearings pre- "vious to Mr. Cramer's invention. Treadles were "also mounted in the legs of a sewing machine by "any suitable kind of bearing, such as point-center "bearings, mounted directly in the legs. In that

" case the operation of the treadle had a tendency to " spread the legs, in which case the fit of the bear- " ings would no longer be accurate. In other words " they would be out of alignment and the treadle " would run hard and wear the bearings unequally." (Rec., 120.)

Plaintiff's expert witness, A. C. Brown, testified as follows:

" I have been connected with sewing machines in " one way and another about twenty-seven years. I " have been connected with the Domestic Company, " Wheeler & Wilson, the Singer Company, the " White Company, and the New Home. During " that time I have had occasion to examine very " much into the modes and operation of different " styles of sewing machines. I have become quite " familiar with all the mechanism of a sewing ma- " chine. I was connected with the Singer Sewing " Machine Company from 1887 to 1890. Prior to " the year 1880 the treadles of sewing machines were " mounted on a rod usually with cones at the end of " the treadle. The treadle worked on cones, the " cones being on the rod, the cones were held in place " on the rod with a set-screw. The cones were fitted " into a socket made in the treadle to conform to the " same shape as the cones. The end of the collar was " cone-shape that fitted into a socket in the treadle, " and that cone was held in position by a set-screw. " There was a great deal of difficulty in that style " with regard to keeping the treadle bearings in per- " fect alignment. First, the set-screw would become

"loose from working. That would necessitate clos-
"ing this up and taking up the lost motion. This
"being more or less worn loose on the rod, as most
"of them were, it would throw it out of alignment
"on account of it being thrown to one side, or prob-
"ably not in the same place that it originally had
"been. When those things got out of alignment the
"result was heavy running and noisy. The noise
"would be occasioned by lost motion, and the heavy
"running would be caused by friction, uneven bear-
"ings. I noticed that defect in that style of machine
"very decidedly. It was a thing we had a great deal
"of trouble with, always tightening that up. The
"only thing to do was to loosen that set-screw, push
"it up and take up the loose motion for the time
"being; but it would soon get loose again. It was a
"constant source of annoyance, that is my experience.
"I had considerable experience in that line. Anoth-
"er kind of mounting for the treadle at that time
"was a kind of knife-edge bearing. The knife-edge
"would be on the treadle and that would be set on
"the rod, held in its place by something very similar
"to this cone, a sort of a collar. When they got
"loose they would be noisy and out of alignment. It
"would make it noisy and hard running. In all
"these machines the treadle was mounted on the tie-
"rod that tied the two legs at the bottom." (Rec., 160-1.)

Plaintiff's witness, Joseph E. Lawlor, testified as follows:

"I am in the sewing machine business since 1875.

" Until the 14th of last October I was connected with " the Singer Company. When I began in 1874 the " treadle was mounted with cones on a rod running " across from one stand to the other, the tie-rod " which held the legs together. The cones were held " in place by a kind of screw that held the treadle in " its place. These cones would loosen all the time. " The treadle was wearing on this rod, consequently " it would get loose and therefore our difficulty was, " we would be called on to tighten those. The treadle " was always moving up and down, making a good " deal of noise. When the cones got out of order we " would unscrew them and place them in against the " treadle so as to hold it tight. As fast as they be- " came loose that way we would have to readjust " them. When they got loose and wore that way " they caused a rattling noise. It had not the steady " motion that the new treadle has. It has a kind of " jerky motion. To give you an instance, one day I " was in Santa Rosa trying to sell a sewing machine " to a doctor's sister. I was talking the merits of the " Singer sewing machine when the doctor came in. " He told his sister not to have anything to do with " the machine because it was not steady. She was " not a very healthy lady—delicate. I told her of " the steady ease of the new Singer, and he put his " foot on the improved treadle and he found it was a " very easy, soft motion, and he told her she might " buy it. That was one of the new patent treadles " (Diehl's). If it had been this old treadle (cones " and set-screws) I do not believe he would have let " her take it. (Rec., 185.) The next treadle mount-

"ing adopted by the Singer Company, after they "stopped the use of cones and set-screws, was to "mount the treadle in the legs. They used that "style of mounting probably three or four years. It "gave still that short jerky motion. It had not the "easy, soft motion of this other treadle (Diehl's). "In the next one they adopted they mounted the "treadle in the vertical brace. That was a great im-"provement. They have not changed from that "style of mounting up to the present time. They "have had three styles of mounting; first, in 1874, "they mounted the treadle on the rod that connected "the legs together. That they found objectionable. "Afterwards they mounted the treadle in the two "legs of the machine, which also was found objec-"tionable. Afterwards they mounted the treadle in "the vertical brace and have kept it there ever since. "That was the development from one to the other. "The last one they got they called the improved "treadle. They still have it on the market to-day. "That gives good satisfaction. I have probably sold "for the Singer Company a thousand or more ma-"chines with that style of improved treadle mount-"ing. The Singer Company advertises that up to "date they have sold over 16,000,000 machines." (Rec., 188.)

Plaintiff's witnesses Herman Cramer, Jr., (Rec., 175-6), and Mrs. E. S. Abbott, (Rec., 155), likewise gave valuable testimony on this subject.

We submit, therefore, that this record shows that prior to the date of the Cramer invention in 1880 the

only two methods used for mounting a sewing machine treadle was either on the tie-rod, by means of cones and set-screws, or directly in the two legs of the machine, and that both of these methods were liable to the most serious objections, thus presenting a known defect in the art to be solved by some one's inventive genius.

Only one word more concerning the state of the art. The defendant put in evidence, for the purpose of showing the state of the art, the following exhibits:

U. S. Patent to Wilcox, of 1870. (Rec., 214.)
Eng. Patent to Bourdin, of 1874. (Rec., 202.)
U. S. Patent to Donovan, of 1881. (Rec., 208.)
U. S. Patent to Lawler, of 1882. (Rec., 216.)
U. S. Patent to Gregory, of 1882. (Rec., 212.)
Geo. P. Bent, device of 1881. (Rec., 223, 230.)

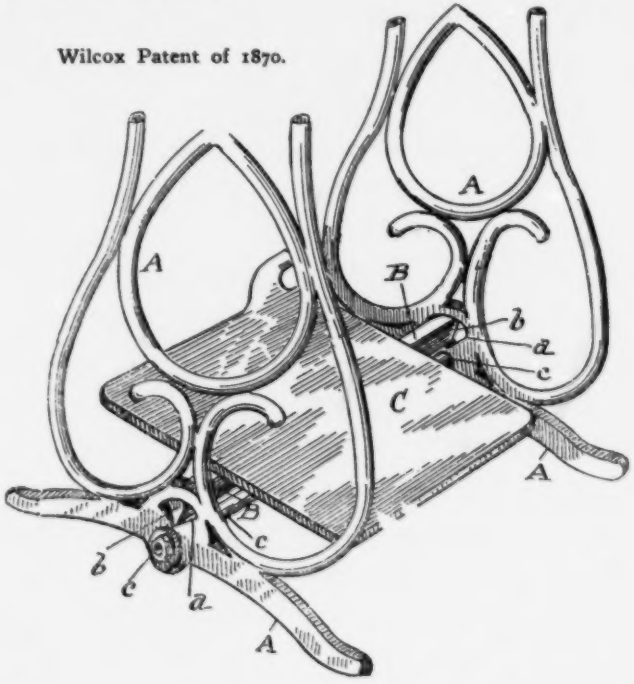
Concerning these exhibits only the first two, Wilcox and Bourdin, have any relevancy to the issues here, because they are the only ones early enough in time. Cramer's invention was completed in June, 1880, as shown conclusively by the record. Consequently, the patents of Donovan, Lawler, Gregory, and Bent, all of which were subsequent to June, 1880, must be dismissed from consideration. They are

not *prior,* but *subsequent* devices. This leaves only the Wilcox and Bourdin patents, concerning which we say a word.

WILCOX PATENT OF 1870.

The drawings of this patent are very obscure, requiring a magnifying glass to be accurately read. In order to lessen the labors of the court in that regard and aid it in interpreting the patent, we have produced below an illustrative drawing of the Wilcox patent, which shows the device more clearly than the patent drawings.

Wilcox Patent of 1870.



It will be seen that the frame has no vertical double brace at all, but consists simply of a top, two sides (or legs) and a tie-rod connecting the legs. Just above the tie-rod the treadle is mounted in the two sides, or legs, by means of knife-edge bearings. The treadle C is secured to a bar or rod B. This bar is formed at each end into a triangular knife-edge projection *b*, which fits into V-shaped bearings *a*, made in the lower part of the sides, or legs, A. This construction is nothing more than a treadle mounted in the legs on knife-edge bearings, and is liable to all the objections pointed out by the witnesses as inherent in the mounting of treadles in the legs of a sewing machine. It is substantially the same kind of mounting (except that knife-edges take the place of point-centers) used for a time by the Singer Company prior to Cramer's patent, and discarded after the issue of that patent, when they adopted the Cramer method of mounting in the vertical brace. The fact that this Wilcox patent shows knife-edge bearings does not in any way affect us, because we freely admit that knife-edge bearings were old, and the Cramer specification distinctly and unequivocally disclaims them as any part of his invention. His invention consists in mounting the treadle in the verti-

cal brace by some kind of appropriate bearings, whether they be knife-edge, point-center, pin, or other kind. He illustrates the knife-edge as the kind he prefers to use, taking care to say that they are no part of his invention. We cannot see how the Wilcox patent can affect the fundamental issue in the case, which may be thus formulated: Granted that the only known methods of mounting sewing machine treadles prior to June, 1880, were on the tie-rod and in the legs by some kind of appropriate bearings, was it any invention on Cramer's part to mount such treadles in the vertical brace by the same kind of old bearings?

BOURDIN'S ENGLISH PATENT.

The drawings of this patent are likewise very obscure and difficult of comprehension, especially since the part relied on by our adversaries *is not described in any way, shape, or form in the specification.* Under these circumstances we have employed the most skilled draftsman on the Pacific Coast to spell out the construction of the patent, and then illustrate it in drawings which one can comprehend.

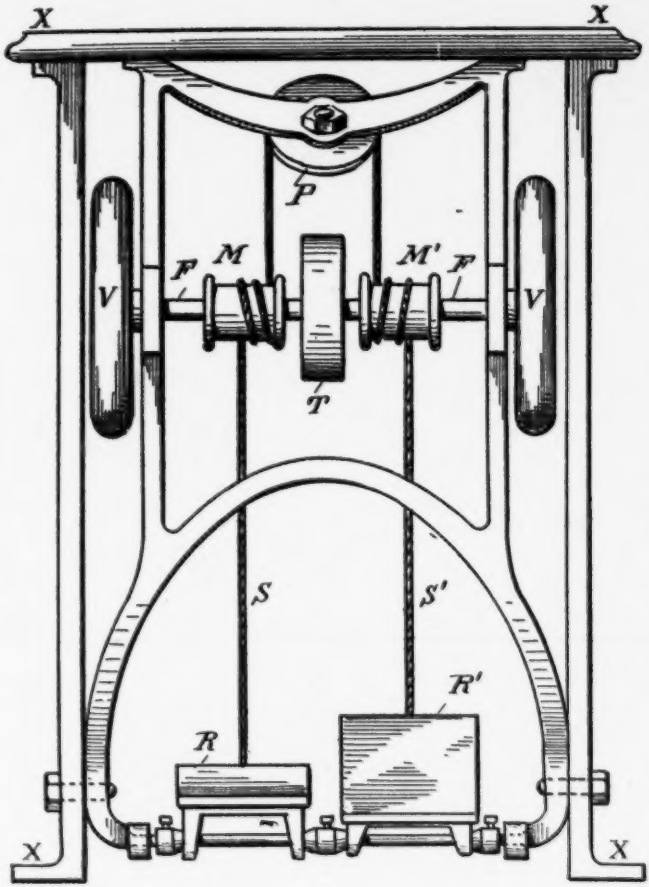
In doing this we have been more than fair to our adversaries, because, if there is any proposition of patent law well settled, it is that an anticipatory de-

vice, to be of any effect, must disclose on its face the patented invention, and cannot be aided by surmise or conjecture as to what was intended. It must disclose the patented structure by apt description. Waiving that point for a moment, permit us to consider the Bourdin patent in the light of what it may possibly have been intended to show.

On the adjoining page is a cut showing the Bourdin machine.

This machine shows a double vertical brace, having its lower ends extending outward at an angle to the frame. These two ends are connected by a tie-rod, which is securely riveted into the ends of the brace, and is substantially the tie-rod shown in Diehl's machine, except that it is riveted to the brace instead of being made integral therewith.

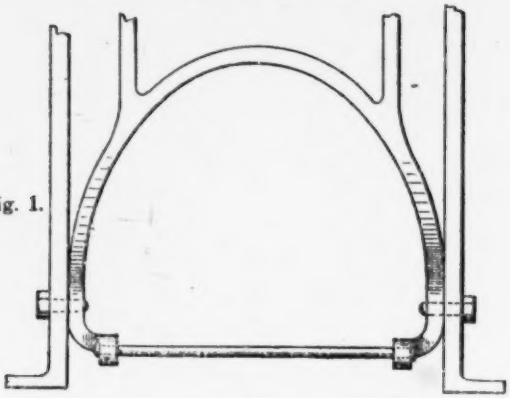
Bourdin's English Patent.



The following cuts show the lower end of the vertical brace and the tie-rod. Figure 1 is a front view and Figure 2 a side view. The end of the vertical brace is curved outwardly and the tie-rod is riveted into the two ends of the brace.

Detailed Views Bourdin's Eng. Patent

Fig. 1.



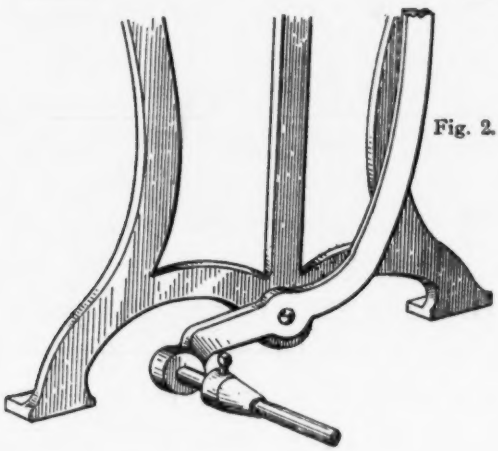
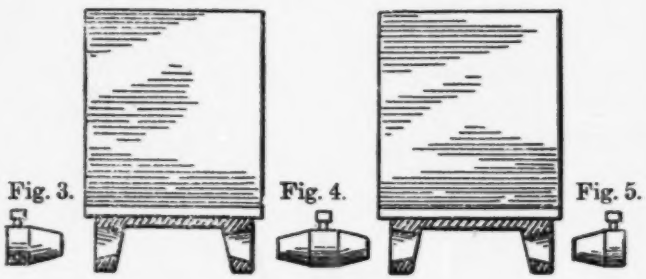
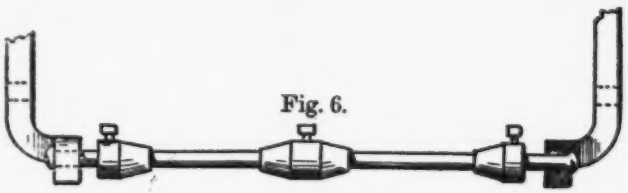


Fig. 2.

Two treadles are mounted on this tie-rod by the old-fashioned method of cones and set-screws. The treadles are not mounted in the vertical brace, but on the tie-rod, and it is purely an adventitious circumstance that this tie-rod is riveted to the vertical brace instead of to the legs. The following cuts il-





lustrate the idea. Figures 1 and 2 show the treadles disconnected, and Figures 3, 4 and 5, the cones and set-screws. Figure 6 shows the tie-rod with the cones in place, but the treadles removed. Such a mounting of the treadles is liable to all the objections heretofore adverted to. The set-screws will get loose and

the cones will wear away by friction. Then the treadles becoming loose, will slip endwise back and forth on the rod, causing a rattling noise, uneven running, and binding. When the cones wear out, then the rod must be unriveted and cut out, and a new one put in, an operation which must be performed by a mechanic. In this regard the construction is inferior to any we have considered.

Furthermore, the machine is utterly impracticable and has never gone into use. It has two treadles, one for each foot. These treadles have no pitman, but are connected by flexible cords to winding drums on the power shaft. When one treadle is depressed, the other is elevated, and *vice versa,* one drum winding while the other unwinds. In this way a continuous rotation is given to the shaft. The machine cannot be operated by one foot, which is the usual way of operating a sewing machine in a factory where the operator stands while running the machine, using one foot to steady himself and the other to operate the treadle. It is apparent at a glance that this machine is utterly impracticable.

Mr. Cramer testified of the Bourdin model, as follows:

"The treadle upon this model is mounted on "a rod that is held by cones and set-screws; the

"mounting of those treadles on the cones and set-
"screws does not differ any from the old way of
"mounting them on cones and set-screws, about
"which we have had so much testimony; there is no
"alignment to it all; besides you have to put down
"one foot and then the other foot; you do not work
"with one foot; in addition to that, it is upon a
"hinge, like a door, or like the tail-board of a wagon,
"and is not an oscillating treadle at all; it is wholly
"impracticable and a useless contrivance. I do not
"think there was ever a single one like it in the
"United States; you could not work that with one
"foot. I, being lame, could not work it at all; it is
"not oscillating; there is a rope that you have to
"pull up and down, and you have to keep a steady
"tension on one side to work the other side; if those
"cones were to wear and the set-screws get loose, you
"would have to put on new cones if they burst; if
"that happened, you would have to saw the whole
"thing apart and put in a new rod and new cones;
"if those cones were to wear and the set-screws get
"loose, they would flop from side to side; they would
"slide horiontally on the rod; that style of mount-
"ing the treadle would be liable to the same objec-
"tion as the old style of cones and set-screws." (Rec., 383-4.)

Plaintiff's witness, A. C. Brown, testified on the subject as follows:

"I see two treadles here mounted on a rod in the
"old style way, cones with set-screws in them fast-
"ened to the rod in the regular old way of mount-

"ing a treadle on a rod (Rec., 387); it is one and "the same thing, as I testified here before; they are "put on a rod and held in place by those cones with "set-screws in the cones to hold the cones to the rod, "just the same thing as what I testified to in the old "style treadle fastened to the rod—the same objec-"tion. I never saw anything of this kind in prac-"tical use; I don't see anything practical about it; "I am using sewing machines every day, and I could "not use that at all; I could not use it simply be-"cause I use one foot; you may say why do I not "use two feet, I say because I need the other foot on "the floor to steady my body; there are a great many "use one foot and it is also practical to use two; it is "common to run a sewing machine with one foot, "very much so; I should say more than half the peo-"ple run a sewing machine with one foot; I have "been in the sewing machine business for a number "of years and am familiar with all styles of sewing "machines that are being sold and have been sold for "a number of years past; I never saw a sewing ma-"chine on the market or in use anywhere similar to "the one that is exhibited by this model; there is no "rigid pitman rod in this machine; there are strings "here or rods; they are intended to operate the "treadle, a sort of pulley arrangement; that would "be getting out of order; those rods would be "stretched and have to be adjusted and it would be a "constant source of annoyance all the time; I posi-"tively could not use any such treadle as that." (Rec., 388.)

Plaintiff's expert witness, L. W. Seely, testified concerning the Bourdin model as follows:

"Inasmuch as the treadles are mounted upon a "rod, or rather upon cones upon a rod, they are sub- "ject to all the disadvantages which I have pointed "out before as necessarily attaching to such a con- "struction; I find a disadvantage also in the form of "the treadle and the connection with a sewing ma- "chine mechanism by means of cords; the invention "in this case of Bourdin did not apply to the tread- "les, it was a means of driving the shaft above the "pedals; on the shaft are two separate oscillating "sleeves with a clutch inside of each; therefore in "order to drive them alternately and always revolve "the shaft in the same direction it is necessary to use "two shafts upon the rod and to connect those "treadles by a flexible cord or band to these two "sleeves. In operating the machine, in depressing "one treadle the other one is pulled up, and it is "necessary not only to operate the sleeve as each "treadle is depressed, but also to pull up the "treadle, the connection between them being a flexi- "ble one. This device requires two treadles. Those "sleeves on the driving shaft are so arranged that "one of them moves in one direction and the other "moves in the other direction alternately; they are "pulled back and forth on the shaft, but there is a "clutch in each one that alternately takes hold and "lets go; that gives a continuous motion to the shaft, "produced by the alternating oscillations of the two "treadles; I do not find in the Bourdin patent any

"description of the treadle mountings at all; the "treadles are not described in the patent; I find in "the Bourdin patent an improved clutch mechanism "for operating a shaft; I find no description of the "treadle mountings in the patent, no description "whatever; I presume that form of treadle mount- "ing was old at that time; the patent contains no de- "scription whatever of the treadle; all I find there "is a figure or drawing in that regard; there are two "treadles; there is a single pointed cone and set- "screw outside of each treadle, and another cone and "set-screw between the two treadles, forming a bear- "ing between them both, upon the inside; but they "are the same cones and set-screws, secured to the "rod in the same way as has been used for many "years in sewing machines." (Rec., 393.)

The above quoted testimony was not denied, nor was any attempt at denial thereof made. It stands before this court upon this hearing as admittedly true, and we think it is amply sufficient to dispose of the Bourdin patent.

And finally, as remarked above, there is no description whatever of the treadle mounting contained in the Bourdin patent. All that it shows in that regard is a drawing without any verbal description whatever. We have already shown that this drawing is not clear, and in order to make it clear have been compelled to produce an illustrated draw-

ing from a skilled draughtsman. But even if the drawing had been sufficiently clear to enable any person to understand it, it would not be sufficient for the purposes of anticipation in the absence of any verbal description. A drawing alone and unaided cannot anticipate. This point is sustained by the following authorities:

New Process Co. vs. *Koch,* 21 Fed. Rep., 580.
Briton vs. *White Man. Co.,* 61 Id., 95.
Reeves vs. *Bridge Co.,* 5 Fisher, 468.
Parsons vs. *Colgate,* 15 Fed. Rep., 600.
Robinson on Patents, Section 325.

and is in accord with the general rule laid down by this court in *Seymour* vs. *Osbourne,* 11 Wall., 555.

In view of the foregoing, we submit that the Bourdin patent does not show a treadle mounted in the vertical brace, but only treadles mounted on the tie-rod by means of cones and set-screws in the old-fashioned manner; that such mounting is liable to serious defects, and that the Bourdin machine is utterly impracticable and inoperative, for which reason it can have no effect on the Cramer invention.

But, whatever the Bourdin patent shows, that was a question of fact for the jury to pass on. They did

pass on it, and their decision in that regard cannot be reviewed in the appellate court.

Having now clearly in mind the state of the art, this court will be prepared to determine the proper construction of Cramer's claim. We shall discuss the question from several different points of view, as indicated by the following synopsis:

CONSTRUCTION OF CRAMER'S CLAIM:

1. *In view of the state of the art.*
2. *In view of the statute prescribing the form of claims.*
3. *In view of the technical language of the claim.*
4. *In view of the file-wrapper contents.*
5. *In view of Judge McKenna's decision in* Cramer *vs.* Fry.

Taking up these points *seriatim*, we contend:

1. CRAMER'S CLAIM IS ENTITLED TO A BROAD CONSTRUCTION, IN VIEW OF THE STATE OF THE ART.

It is our contention that this claim covers a broad generic invention, which consists in mounting the treadle directly in the vertical double brace by any kind of appropriate bearings.

It cannot be denied that this record shows conclusively that Cramer was the first in the art to so mount a treadle. Prior thereto the treadle had been mount-

ed on the tie-rod or in the legs, sometimes by knife-edge bearings, sometimes by point-center bearings, but generally and usually by cones and set-screws.

It is equally clear that all those former styles of treadle mounting were liable to serious objection, and constituted a known defect in the art loudly calling for a remedy. Many efforts had been made to remedy the defect, without success. Cramer did remedy it, and this he did by mounting the treadle in the vertical double brace. That was his fundamental idea. In carrying it out, it was necessary to make use of some kind of a bearing for the treadle to oscillate on, and he selected from the then existing art that form of bearing which he considered best suited for his purpose, to wit: the knife-edge. He made no invention in the bearing itself. He might have adopted plain round journal-bearings, or point-center bearings, or any other kind; but what he did adopt was the knife-edge, because he considered that the best. In order, however, that no one might be misled, he distinctly states in his specification that such bearings were old and he did not claim them as any part of his invention. This goes a long way towards sustaining our contention as to the generic character of the invention.

It is clear from the record that the mounting of the treadle in the vertical double brace, whether by knife-edge, point-center, pin, or other form of bearings, remedied the known defect in the art, which Cramer was striving to overcome, and made a perfect treadle-mounting. It was a most valuable contribution to the art, and the evidence on this point is overwhelming. Indeed it is necessarily conceded by the motion to instruct the jury.

Permit us to advert briefly to some of the undisputed evidence on this point.

The expert witness, A. C. Brown, a sewing machine man of twenty-seven years experience, who formerly worked for the Singer Company, after stating the defects of the tie-rod mounting, testified concerning the Cramer invention as follows:

"The brace being all in one piece, there is no "chance of its getting out of place, and the treadle "will always be in alignment, always will be in its "proper position and place; it overcame very de- "cidedly the defect I spoke of, those cone collars on "the rods connecting the two legs (Rec., 162), from "the fact that this treadle is hung here in the brace "on the bearings there is no possible chance of its "getting out of alignment, from the fact that the "brace is constructed of one piece, no joints in it, "and if the leg gets one way or the other it would

" not put the treadle out of line; there are no cones to " get loose on a rod, no collars to get loose on a rod; " and the greatest advantage is, that it keeps it al- " ways in its proper place, in perfect alignment, " from the fact of its being hung in one solid piece " of metal (Rec., 163); it would overcome the de- " fect, as it would do away with the lost motion " caused from those cones on the tie-rod; the new " advantage, the greater advantage, I suppose that " would be the new feature, would be to get a per- " fect alignment, doing away with the possibility of " lost motion, do away with constant adjustment, and " by the construction it makes it more possible to be " lighter running than heretofore; the particular " construction is, the treadle being hung in the " brace, it is bound to be in the proper position and " it is not possible for it to get out of alignment, " which it would in the old way, as already ex- " plained; prior to June, 1880, I had never seen, " known, or heard of machines in which the treadle " was hung in the vertical brace." (Rec., 164.)

Expert witness L. W. Seely testified on the subject as follows:

"Mr. Cramer conceived the idea that, if he hung " his treadle in the brace, it would be totally discon- " nected both from the legs of the machine and from " the tie-rod, and all the objections which had been " insuperable from both of these forms of treadle " support, would be done away with; that is the con- " struction which he describes in his patent, the " hanging of the treadle on bearings which are in

"holes at the lower end of the vertical brace; and as "that brace is a solid, rigid piece, the bearings al- "ways remain where they are first put, that is, in "line; if the legs should spread, no effect is pro- "duced upon the bearings of the treadle, since it is "impossible for the fork of a double brace to move "or to spread, and the bearings will remain in line "and at a fixed distance apart." (Rec., 120.)

Herman Cramer describes in detail the defects of the prior art, and tells about the numerous and continuous experiments he made with a view to overcoming the same, and he did overcome them by the invention in question. He was asked what was the result of putting the treadle in the vertical double brace instead of in the legs or on the bar or tie-rod. His answer was, it gave it a stationary and more uniform motion, and no inexperienced person could get it out of line; it was always in line, as near frictionless and noiseless as it could possibly be. (Rec., 40.)

Herman Cramer, Jr. (Rec., 175 *et seq.*), and Mrs. E. S. Abbott (Rec., 155) gave valuable testimony on the same subject. The last-named witness was a professional seamstress, familiar with all the details of a sewing machine. She testified that she used one of the Cramer machines constantly for ten years, and that it never got out of alignment; that it always gave perfect satisfaction, and that she never heard

of any complaint from the other people who had used the Cramer machine. (Rec., 155.)

Many of the defendant's witnesses on cross-examination admitted the value of the Cramer invention.

But the strongest possible evidence of the advantage and utility of mounting the treadle in the vertical brace is the fact that the Singer Company originally mounted its treadle on the tie-rod and in the legs, when they knew of no better method, but as soon as the Cramer patent was issued and their attention was called to the advantage of mounting the treadle in the vertical brace, they abandoned the old method and adopted the new one. That was shortly after the Cramer patent was issued, and since then they have sold many millions of machines with the treadle mounted in the brace, and have never changed from that construction.

A catalogue of the Singer Company, of 1885, put in evidence as complainant's Exhibit L (Rec., 52), contains a cut of the infringing machine, with the treadle mounted in the brace, and the following description thereof:

"The balance-wheel and *treadle have their bear-*
" *ings entirely independent of the stand* (or legs),
" thereby assuring a correct adjustment and easy ac-
" tion. This device prevents the 'building' which

"so often follows a slight displacement of the sup-
"ports of the machine, *a difficulty rarely appreci-*
"ated, except by a skilled mechanic, which hitherto
"it has been impossible to remedy. This distinctive
"feature of the Singer machine is of great import-
"ance to the health and comfort of the operator.
"The balance-wheel and treadle also work upon ad-
"justable centers, by means of which the friction is
"reduced to a minimum, while lost motion can be
"readily taken up. These devices render the New
"Singer stand the lightest running of any sewing-
"machine motion ever constructed."

And in another catalogue of the same company, issued in 1889 (Rec., 50), we find a cut of the infringing machine and the following statement underneath:

"The above cut shows the I. F. Machine mounted
"on a simple and elegant form of cabinet work,
"which is very popular with those who require a
"machine for daily use. It also shows a new (pat-
"ented) and light running stand, upon which all
"our family machines are mounted, with band
"wheel and *treadle entirely supported within the*
"brace, insuring accurate adjustment and ease of
"operation."

And in another part of the same circular, where reference is made to the treadle bearings, it is said:

"These bearings *being entirely within the brace,*

" the adjustment is not affected by any strain which " may be put upon the same."

The witness Lawler, who was a former employee of the Singer Company, testified that in 1874 the Singer Company mounted the treadle on the tie-rod by means of cones and set-screws; that this mounting, being found objectionable, was discarded, and in place thereof the treadle was mounted in the legs; that this was also found objectionable, and in about 1885 that method also was discarded, and the treadle was mounted in the vertical brace, where it has ever since remained, and from which no change has been made by the Singer Company, the same giving perfect satisfaction, and many millions of machines of that style being sold.

In view of the foregoing facts, all shown by the record and taken as absolutely true on this hearing, we submit that the Cramer invention is fundamental in character, and that it introduced into the art an absolutely novel feature of great utility, to-wit: *the mounting of a treadle in the vertical double brace of a sewing machine stand.* It matters not what kind of bearings are used for so mounting the treadle. They may be common journal bearings, or point-center bearings, or knife-edge bearings, or any other

species of bearings. The fundamental idea was to mount the treadle in the brace, without regard to the character of the bearings. Beyond all peradventure of a doubt, such is the scope of *the actual invention* made by Mr. Cramer, and, consequently, the court will construe his claim to be commensurate with the scope of that invention, unless there is something apparent on the face of the patent itself to show that Cramer did not intend to make such broad claim, but deliberately and intentionally abandoned and dedicated to the public the broad feature of his invention. This brings us to a consideration of the second proposition, viz:

2. CONSTRUCTION OF THE CLAIM IN THE LIGHT OF THE STATUTE PRESCRIBING THE FORM OF PATENT CLAIMS.

We understand the contention of our adversaries to be that the language of the claim is such that it cannot receive a broad construction, but must be limited to the precise mechanism shown in the patent. In other words, while admitting the broad and pioneer character of the *invention actually made* by Cramer, it is insisted that he abandoned and dedicated to the public the broad feature thereof, because the language of the claim, as a mere matter of

language and grammar, is not sufficiently comprehensive to cover the broad invention actually made.

It is our contention, however, that this claim is drawn in strict compliance with the statute, and, being so drawn, *per force,* it covers the actual invention made, which we have already shown was broad and generic.

This claim, as a mere matter of language, appears to be drawn to the special device shown in the specification; but that fact does not prevent it from receiving a broad construction, in view of the pioneer character of the actual invention made. Claims for pioneer inventions, though couched in specific language, are entitled to a construction commensurate with the scope of the actual invention, unless there be a manifest intention, apparent on the face of the patent, to limit the claim to a specific form and to dedicate the broad feature to the public. Indeed, according to the letter of the statute, *all* claims, whether for broad or narrow inventions, should be couched in specific terms. We are aware that the modern tendency of patent solicitors is to draft claims in generic language, but this is not in accordance with the letter of the law. While we do not go so far as to contend that a claim for a generic invention, couched in generic language, is bad, we do as-

sert that a claim for a generic invention, couched in specific language, is good.

Prior to 1836, it was not necessary for a United States patent to contain any claim at all. The first patent act passed by Congress, that of 1790 (First Statutes at Large, 109), provided that a person who had made an invention and desired to secure a patent therefor, might file a petition with the Secretary of State, Secretary of War, and the Attorney-General, setting forth that he had made an invention and desired to secure a patent therefor; whereupon it became lawful for the said officials, or any two of them, if they deemed the invention sufficiently useful and important, to cause letters patent to be made out therefor, reciting the allegations and suggestions of the petition, "and describing said invention or "discovery clearly, truly, and fully, and thereupon "granting to such petitioner or petitioners, his, her, "or their heirs, administrators, or assigns, for any "term not exceeding fourteen years, the sole and ex- "clusive right and liberty of making, constructing, "using and vending to others to be used, the said in- "vention or discovery."

These letters patent were then delivered to the Attorney-General of the United States, whose duty it

was to examine the same and see if they were in conformity with the act, and they were then presented to the President, who caused the seal of the United States to be affixed thereto.

The act further provided that the patentee, at the time that the patent was granted to him, should deliver to the Secretary of State "a specification in "writing, containing a description, accompanied "with drafts or models and explanations of models "(if the nature of the invention or discovery will "admit of a model) of the thing or things by him "invented or discovered and described as aforesaid "in the said patent, which specification shall be so "particular, and said model so exact, as not only to "distinguish the invention or discovery from other "things before known and used, but also to enable a "workman or other person skilled in the art of manufacture whereof it is a branch, or wherewith it "may be nearest connected, to make, construct, or "use the same, to the end that the public may have "the full benefit thereof after the expiration of the "patent term."

No technical "claim" was required, but merely a definite description of the invention.

The foregoing act was repealed on February 21,

1793, and a new patent act, known as the patent act of 1793, enacted in its stead. (First Statutes at Large, 318). This second patent act provided that the petition should be presented by the inventor to the Secretary of State, praying that a patent be issued for the invention, and that the Secretary of State should thereupon cause letters patent to be made out, reciting the allegations and suggestions of the said petition, and "giving a short description "of the said invention or discovery." These letters patent were then delivered to the Attorney-General as before, and the letters patent were then sealed and delivered. The act further provided that before the inventor could receive his patent, he should make oath that he verily believed himself to be the true inventor, and "shall deliver a written description of "his invention and the manner of using or process "of compounding the same, in such full, clear, and "exact terms as to distinguish the same from all "other things before known, and to enable any per-"son skilled in the art or science of which it is a "branch or with which it is most nearly connected, "to make, compound, and use the same. And in "case of a machine, he shall fully explain the prin-"ciple and the several modes in which he has con-

" templated the application of the principle or char-
" acter by which it may be distinguished from other
" inventions; and he shall accompany the whole with
" drawings and written references, where the nature
" of the case admits of drawings, or with specimens
" of the ingredients and of the composition of matter
" sufficient in quantity for the purpose of experi-
" ment, where the invention is a composition matter,
" which description, signed by himself and attested
" by two witnesses, he shall file in the office of the
" Secretary of State."

Neither did this act make any provision for a technical "claim," but merely for a written description. Intermediately between this act and that of 1836, various and sundry amendments were enacted, but none of them referred to the subject matter under consideration, and therefore need not be considered.

In 1836 Congress passed the patent act which is the foundation of our present patent system and a radical departure from anything which had preceded it. By that act, the Patent Office was established, and the elaborate system of business, substantially as at present conducted by that office, was inaugurated. The manner of securing patents ordained by that act was by the filing of a petition and

specification with the commissioner of patents, and an examination and allowance by the Patent Office, and the issuance of a patent therefor. Among other things, it was provided that before an applicant could receive a patent "he shall deliver a written de- "scription of his invention or discovery, and of the "manner and process of making, constructing, using "and compounding the same, in such full, clear, and "exact terms, avoiding unnecessary prolixity, as to "enable any person skilled in the art or science to "which it pertains, or with which it is most nearly "connected, to make, construct, compound, and use "the same; and in case of a machine he shall fully "explain the principle and the several modes in "which he has contemplated the application of that "principle or character, by which it may be distin- "guished from other inventions; *and shall particu- "larly specify and point out the part, improvement, "or combinations which he claims as his own inven- "tion or discovery.*"

The last clause, put in italics by us, was a new feature, and is the provision requiring the applicant to make a technical "claim." Ever since then, all patents are required to have a claim.

The act of 1836, after being amended from time to

time, finally culminated in the consolidated patent act of 1870, and this was substantially embodied in the revised statutes, which constitute the present law of the land. By section 4888 of said revised statutes it is provided as follows:

"Before any inventor or discoverer shall receive a "patent for his invention or discovery, he shall make "application therefor in writing to the commis- "sioner of patents, and shall file in the Patent Office "a written description of the same and of the man- "ner and process of making, constructing, com- "pounding, and using it, in such full, clear, concise "and exact terms as to enable any person skilled in "the art or science to which it pertains, or with "which it is most nearly connected, to make, con- "struct, compound, and use the same; and in the "case of a machine he shall explain the principle "thereof and the best mode in which he has contem- "plated applying that principle, so as to distinguish "it from other inventions; *and he shall particularly "point out and distinctly claim the part, improve- "ment or combination which he claims as his inven- "tion or discovery.*"

The last clause, put in italics, is the same as the corresponding clause of the act of 1836, and is the one which provides for a "claim." Note carefully the language thereof—he shall *particularly point out and distinctly claim* the part, improvement or

combination which he claims as his invention or discovery. This language is not meaningless. It conveys a definite and exact thought. After the patentee has, in his specification, fully described his invention, he must then *particularly* and *distinctly* claim that part of it for which he desires protection. An invention (we are now referring to machines) must be embodied in concrete form. The drawings must show it in such form, and the specification must so describe it. It must likewise be shown and described only in one form, which, according to the act, must be "the best mode in which he has contemplated ap-" plying that principle." After this is done, the law requires nothing more than that the applicant shall *particularly* and *distinctly* point out the part or parts of that described machine which he claims as his invention. If it be a particular lever, cam, screw, or clutch, he must *particularly* and *distinctly* claim such lever, cam, screw, or clutch, and in so doing he must call it by its appropriate and specific name. When he does that, he has "claimed" his invention strictly according to the statute. The law does not assume that he is a rhetorician, or skilled in dialectics, nor require that he shall adopt broad and generic language in order to get full protection. It

merely requires that he shall claim the thing which he has invented, and in so claiming may call it and designate it by its own particular name. This is true, whether the invention be broad or narrow, pioneer or improvement, because the statute has made no distinction in claiming different kinds of invention. They must all be claimed in one and the same manner.

We are certain, therefore, that according to the statute it is sufficient for a patentee to claim his invention *in the specific forms shown by the drawings and specification,* whether that invention be a broad or narrow one, and that there is no provision of the law for framing the so-called "generic" claims of modern days.

When it comes to the matter of construing these claims, then a different proposition arises. The mere fact that the claim is drawn to the specific form shown does not necessitate a narrow construction, because that is the form of claim, and the only form, provided for by the statute, and whether or not the claim shall be limited to that specific form, or extended to cover other forms, depends solely and entirely upon the scope of the actual invention made. If the invention be a narrow one, then the claim will

be limited to the specific form shown and claimed; if it be a broad, pioneer invention, then the claim will not be so limited, although couched in specific language, but will be extended to other forms in which the invention may be embodied. In every case, therefore, we must go to the state of the art and ascertain what is the actual scope of the invention. That is the pivot on which every other question turns in a patent case. As stated above, we do not go so far as to contend that the modern generic claims are absolutely void, because that is not necessary to the argument, but what we do claim is that the statute authorizes—in fact, commands—that all claims must be drawn in specific terms, and, consequently, a claim for a pioneer invention, drawn in specific terms, will and must receive just as broad a construction as though framed in the broadest and most generic terms.

If the foregoing argument be sound, then there can be no possible criticism of Cramer's claim. He made a broad, generic invention, consisting in mounting the treadle of a sewing machine in the double vertical brace. In order to so mount the said treadle, it was necessary to use some form of bearing, and he was entitled to borrow from the then existing

art any known form of bearing, the only proviso being that he must show the one that he considered best. Under this provision of the law, he selected the knife-edge form, and in order to utilize that particular form, it was necessary to provide his treadle with trunnions. Consequently, he shows and describes, as the best form of his invention, a treadle provided with trunnions formed into knife-edge bearings. He then claimed the invention in that form, just as the statute required him to do, and we submit that this was not only sufficient in law, but strictly in accordance therewith.

While this particular question has never been raised in the manner in which it is now put, so far as we are aware, still there is abundant authority to be found in the books for our contention.

Winans vs. *Denmead*, 15 How., 330, is an apt illustration of the point under discussion. The case is so familiar to all that it would be a waste of time to refer to it in detail. The claim of the patent read as follows:

"Making the body of a car for the transportation "of coal, etc., *in the form of a frustum of a cone*, "substantially as herein described, whereby the "force exerted by the weight below presses equally "in all directions and does not tend to change the

"form thereof, so that every part resists its equal "proportions, and by which also the lower part is "so reduced as to pass down within the direct frame "and beneath the axle to lower the center of gravity "of the load without diminishing the capacity of the "car, as described."

Eliminating the descriptive part, it will be seen that the claim is, in substance, for a coal-car made *in the form of a frustum of a cone.* The language is severely specific, and was drawn to the exact form shown in the specification and drawings. The illustration was a coal-car made in the form of a frustum of a cone. The description of the invention was the same. The claim was likewise the same, thus placing the patentee directly within the statute, which orders him to *particularly* and *distinctly* point out the part of the device which he claims as his invention. There could not be conceived a clearer case for the illustration of our position.

The question for the court to determine was the proper construction of this claim. Should it be limited to the form of a frustum of a cone, or could it lawfully be extended to cover other forms, for instance, the frustum of a pyramid? This court held that the solution of the question depended upon the scope of the actual invention. If the invention was

generic, the claim would receive a generic construction. If specific, then it would receive a specific construction and be limited to the conical form. The court held that the invention was generic, gave it a broad construction, and adjudged that the defendant's car, which was made in the form of the frustum of a pyramid, was an infringement. In delivering the decision of the court, Mr. Justice Curtis used the following language, which has become classic in the history of patent cases:

"It is generally true, when a patentee describes a "machine and then claims it *as described,* that he is "understood to intend to claim, and does by law ac- "tually cover, not only the precise form he has de- "scribed, but all other forms which embody his in- "vention, it being a familiar rule that to copy the "principle or mode of operation described is an in- "fringement, although such copy should be totally "unlike the original in form or proportion * * * "Patentees sometimes add to their claims an express "declaration to the effect that the claim extends to "the thing patented however its form or proportions "may be varied. But this is unnecessary. The law "so interprets the claim without the addition of "these words. The exclusive right to the thing pat- "ented is not secured if the public are at liberty to "make substantial copies of it, varying its form or "proportions. And, therefore, the patentee, having "described his invention, and shown its principles,

"and claimed it *in that form which most perfectly* "*embodies it,* is, in contemplation of law, deemed to "claim every form in which his invention may be "copied, unless he manifests an intention to disclaim "some of those forms."

In other words, this court construed the claim as if it had read: "Making the body of a car for the "transportation of coal, etc., *in a. downwardly* "*tapering form," etc., etc.*

This case was afterwards followed and approved by this court in:

Western Elec. Co. vs. *La Rue,* 139 U. S., 606.
Hoyt vs. *Horne,* 145 U. S., 309.
Eddy vs. *Dennis,* 95 Id., 569.

And also by the lower courts in:

Frost vs. *Silverman,* 62 Fed. R., 465.
Hoe vs. *Scott,* 65 Id., 609.
McCormick vs. *Altman,* 69 Id., 394.
Heap vs. *Greene,* 91 Id., 794.
Norton vs. *Jensen,* 49 Id., 866.
Long vs. *Pape,* 75 Id., 838.
Independent E. L. Co. vs. *Jeffrey,* 76 Id., 991.
Metallic Ex. Co. vs. *Brown,* 104 Id., 353.
Reece vs. *Globe Mch. Co.,* 61 Id., 958.
Devlin vs. *Paynter,* 64 Id., 398.

and many others.

It will thus be seen that the case of *Winans* vs. *Denmead* has, for the last half century, been consistently followed by the federal courts, both appellate and *nisi prius,* and never once doubted. It is to-day the law of the land, and under its authority Cramer was fully justified in framing his claim in the form in which it appears in his patent.

One of the most eminent judges who ever decided patent cases was the late Mr. Justice Bradley. He is often referred to as a "strict constructionist" in the interpretation of patent claims; yet no one could be more liberal than he, where he was satisfied that the patentee had made a meritorious invention but had been unfortunate in the choice of terms in his claims, and that the defendant was relying upon a mere verbal distinction to save himself from the penalty of infringement. A notable instance of this is seen in the case of *Ives* vs. *Hamilton,* 92 U. S., 426. The invention related to a method for hanging a saw in a saw-mill, and was one of great value. The claim was couched in the following awkward phraseology:

"Giving to the saw in its downward movement a "rocking or rolling motion by means of the com- "bination of the cross-head working in *curved* "guides at the *upper* end of the saw, the lower end "of which is attached to a cross-head working in

"*straight* guides and pivoted to the pitman *below* "the saw, with the crank-pin substantially as de- "scribed."

This claim described the cross-head as working in *curved* guides, at the *upper* end of the saw, and the *lower* end of the saw attached to a cross-head working in *straight* guides and pivoted to the pitman *below* the saw. The defendant was able to evade the letter of the claim by discarding the *curved* guides for the upper cross-head and using instead thereof *angular* guides, and by pivoting the lower end of the saw to the pitman *below*, instead of *above*, the cross-head. In the court below the case was tried by a jury, resulting in a verdict for the plaintiff, and on motion for new trial (6 Fish., 244) Judge Longyear sustained the verdict and rendered a most able opinion in support of the patent. These views were concurred in by Mr. Justice Bradley, who affirmed the judgment and gave a sufficiently broad construction to the patent to include the defendant's machine. The claim had been drawn to the precise mechanism shown in the patent. The patentee had *particularly* pointed out and *distinctly* claimed the part of the machine which was his invention as required by law, and it being a broad invention, the claim was held broad enough to cover the variations from that form

which accomplished the same result. Had the claim been worded in generic terms, the defendant doubtless would not have contested the point; but, as it was worded in specific terms, he urged that it must be limited to the specific form. But the court held otherwise. This case is a direct authority for our proposition, that, where the invention is a broad one, it is sufficient to claim it in the form shown in the patent, and the claim will be construed to cover and include all other forms which accomplish the same result in substantially the same manner.

The case of *Clough* vs. *Barker,* 106 U. S., 166, is another instance in point. The invention was an improvement in gas-burners, and the second claim of the patent read thus:

"In combination with the bat-wing burner, perforated at the base and surrounding tube, the tubular valve for regulating the supply of external gas to the burner, substantially as described."

This claim was drawn to the precise structure shown, *particularly* and *distinctly,* as the statute requires. It appeared that in no prior structure had a valve arrangement been applied to regulate the flow of gas in such a combination, and, consequently, the claim was entitled to a broad and liberal interpreta-

tion. The defendant had varied the form of construction, but this court held that the claim must be given a sufficiently broad construction to include the defendant's burner. The decision, rendered by Mr. Justice Blatchford, used the following language:

"Although in the Clough structure the burner and "surrounding tube revolve together in adjusting "their position in reference to that of the tubular "valve, so as to let in or turn off the supply of gas "through the perforations, and although in the "Clough structure the flame revolves by the revolu- "tion of the burner, and although in the defendant's "burners the revolution of the surrounding tube "regulated the supply of gas through such perfora- "tions, and neither the burner nor the flame re- "volved, the defendant's valve arrangement must be "held to have been an equivalent for that of Clough "to the full extent to which that of Clough goes, in- "volving, perhaps, improvements, but still tribu- "tary or subject to the patent of Clough. It is true "that that patent describes the tubular valve as be- "ing inside of the burner tube. But Clough was the "first person who applied a valve regulation of any "kind to the combination to which he applied it, "and the first person who made such combination, "and he is entitled, under decisions heretofore made "by this court, to hold as infringements all valve "regulations, applied to such a combination, which "perform the same office in substantially the same "way as, and were known equivalents for, his form "of valve regulation."

Another apt case is that of *Western Electric Co.* vs. *La Rue,* 139 U. S., 601, where the opinion was rendered by Mr. Justice Brown. The invention was stated in the specification to relate to "telegraph keys," and the claim involved read as follows:

"The combination in a *telegraph key* of a lever, "fulcrumed upon the torsional spring, with the ad- "justing screws 'HH' for regulating the amplitude "of the lever movement and the retractile resistance "of the torsional spring, substantially as described."

It will be observed that the claim distinctly refers to a "telegraph key," which is an instrument used for sending messages, not for receiving them. The defendant had used the same combination in a "telegraph sounder," which is an instrument used for receiving the message at the opposite end of the line. The question was whether this claim should be limited by the exact language used, or whether it should be given a construction broad enough to include other instruments than a telegraph key. This court held that, inasmuch as the patentee was the first in the art to apply the principle of a torsional spring to telegraph instruments of any kind, his claim should be given such construction as would include the use of the spring in all such instruments, whether they be keys for the transmission of messages or sounders

for the receipt of messages. The patentee had *particularly* and *distinctly* claimed his invention in the form shown in his patent, but as it was of a pioneer character, the claim in that form was held to be sufficient to cover other forms. In deciding the case, Mr. Justice Brown used the following pertinent language, at page 606:

"Against this analogous use of his combination, "the patentee is as much entitled to protection as if "the word 'sounder' had been expressly inserted in "his claim. Since the case of *Winans* vs. *Denmead,* "15 How., 330, it has been the settled doctrine of "this court, as expressed in the opinion of Mr. Jus- "tice Curtis, p. 343, that the patentee, having de- "scribed his invention and shown its principle and "claimed it in that form which most perfectly em- "bodies it, is in contemplation of law, deemed to "claim every form in which his invention may be "copied, unless he manifests an intention to disclaim "some of these forms."

The next case in point, also decided by Mr. Justice Brown, is *Hoyt* vs. *Horne,* 145 U. S., 302. The invention related to a rag-engine for making paper, and the claim read as follows:

"The improvement in beating rags to pulp in a "rag-engine, having a beater-roll and bed-plate "knives, consisting in circulating the fibrous ma- "terial and liquids in vertical planes, drawing the

"same between the knives at the bottom of the vat, "carrying it around and over the roll, and deliver- "ing it into the upper section of the vat, substan- "tially as described."

The circulation of fibrous material and liquid in vertical planes resulted from passing that material alternately under and over a horizontal partition; whereas in the prior art that material had been circulated horizontally around a vertical partition. The defendant's apparatus was provided with a horizontal partition at one end and a vertical partition at the other, and therefore, the pulp in it did not circulate in vertical planes, as called for by the plaintiff's patent. In rendering the decision, Mr. Justice Brown said (p. 308):

"It is insisted by the defendant, in this connection, "that there is no infringement of the first claim of "the Hoyt patent, since the pulp is not circulated in "vertical planes, nor is it delivered by the beater roll "into the upper section of the vat as specified in that "claim. Literally, it is not. A technical reading of "the specification undoubtedly requires that the "mid-feather should run horizontally instead of "vertically; but the object of this was that the pulp "should be received and delivered by the beater- "roll along its entire length, viz: across the entire "width of the tub, and this is accomplished in the "same way in both devices. * * * The substi-

" tution of a vertical for a horizontal mid-feather at " the inoperative end of the tub is merely the use of " an old and well known mechanical equivalent, and " obviously intended to evade the wording of the " claim of the Hoyt patent. (*Winans* vs. *Denmead,* " 15 How., 330.) Indeed, the ingenuity displayed " in this evasion is only equalled by the ingenuity " with which it is concealed in the specification of " the defendant's patent."

In the case of *Sessions* vs. *Romadka,* 145 U. S., 29, where the opinion was rendered by Mr. Justice Brown, the invention related to a trunk-fastener, and the claim was couched in the following narrow specific terms:

"The spring catches I, constructed and applied to " the front of the body, as described, in combination " with the tongues or hasps J on the top, when ar- " ranged to operate as set forth."

It would scarcely be possible to conceive of language more narrow in description than that of this claim. It even goes to the extent of designating the elements by specific letters. It also does another, and a most unusual thing, that is, in the body of the claim, after specifying one of the elements by letter, it adds the words "as described"; and at the end of the claim it adds the following unusual form of lim-

itation, viz: "When arranged to operate as set "forth."

If there ever was a case on record where the language of the claim was specific, this is the case. The patentee had, with the most servile fidelity, adhered to section 4888 of the revised statute in *particularly* and *distinctly* pointing out the part of the machine which he claimed. The defendant, of course, had used a different form of construction, and thereby had avoided the language of the claim. But it appeared from the evidence that the invention was pioneer in character, and this court, without any hesitation whatever, held that it was entitled to a broad construction, and was not limited to the specific devices called for by the language of the claim. Said Mr. Justice Brown, in rendering the decision of the court:

"In view of the fact that Taylor was a pioneer in "the art of making a metallic trunk fastener, and in- "vented a principle which has gone into almost uni- "versal use in this country, we think he is entitled to "a liberal construction of his claim, and that the "Romadka device, containing as it does all the "elements of the combination, should be held to be "an infringement, though there are superficial dis- "similarities in their construction."

Compare this case with *Sutter* vs. *Robinson,* 119 U. S., 531, *Keystone Bridge Co.* vs. *Phoenix Iron Co.,* 95 U. S., 274, and *Hendy* vs. *Iron Works,* 127 U. S., 370, where the elements of the claims were referred to by reference letters and the claims construed narrowly and limited to the specific form shown, not because the language was narrow, but because the invention was narrow.

It is shown by the evidence that the principle embodied in the machine of each of said cases was old and that the invention was a narrow one. Consequently, this court limited the claim in each case to the precise construction shown, and held that an apparatus of a different construction, though embodying the same principle, was no infringement.

The point we are discussing is very clearly illustrated by the decision of this court in the case of *Deering* vs. *Winona Harvester Works,* 155 U. S., 286, involving the patent of one Olin relating to a harvester.

The claim was drawn to the specific construction shown, as the statute requires, and the question at issue was what construction should be placed upon the claim. It appearing that the invention itself was a narrow one and not of a pioneer character, a narrow construction was placed on the same, which

was limited to the specific mechanism shown. In rendering the decision of the court Mr. Justice Brown said:

"If Olin had been the first to devise the contriv-
"ance of this description for adjusting the flow of
"grain upon the main elevator, it is possible that un-
'der the cases of *Ives* vs. *Hamilton,* 92 U. S., 426,
"and *Hoyt* vs. *Horne,* 144 U. S., 302, a construction
"broad enough to include defendant's device might
"have been sustained. But in view not only of the
"prior devices, but of the fact that his invention was
"of doubtful utility and never went into practical
"use, the construction claimed would operate rather
"to the discouragement than the promotion of in-
"ventive talent."

In other words, the mere wording of a claim is not of any great moment in determining its construction; but the scope of the invention itself is the important feature. If the invention is a broad one, the court will give the claim a broad construction, notwithstanding the fact that the claim is framed in specific language; but if the invention is a narrow one, then the court will place upon the claim a narrow construction and limit it to its exact language.

As bearing on the point we may refer also to the case of *Westinghouse* vs. *Boyden Power Brake Co.,* 170 U. S., 568, where it is said:

"We have repeatedly held that a charge of in-
"fringement is sometimes made out though the let-
"ter of the claim be avoided. *Machine Co.* vs. *Mur-*
"*phy,* 97 U. S., 120; *Ives* vs. *Hamilton,* 92 U. S.,
"426; *Morey* vs. *Lockwood,* 8 Wall., 230; *Eliza-*
"*beth* vs. *Pavement Co.,* 97 U. S., 126; *Sessions* vs.
"*Romadka,* 145 U. S., 29; *Hoyt* vs. *Horne,* 145 U.
"S., 302."

A most instructive case, from a *nisi prius* court, however, is that of *Murphy* vs. *Eastman,* 5 Fish., 306, decided by Judge Shepley a great many years ago. The invention related to a brush-head, and was described in a specific geometric form and claimed in that form. The defendant had used a different geometric form and thereby evaded the strict wording of the claim; but the invention being one of a pioneer character, infringement was found. In deciding the case Judge Shepley used the following language:

"The patentee does not, as is sometimes done,
"claim in terms the thing patented, however its
"form and proportions may be varied; but the law
"so interprets the claim without the addition of
"these words. In contemplation of law after he
"has fully described and claimed it in a form which
"perfectly embodies it, unless he disclaims other
"forms, he is deemed to claim every form in which
"his invention may be covered."

Another case of like import is that of *Metallic Extraction Co.* vs. *Brown,* 104 Fed. Rep., 346, which was decided by the circuit court of appeals for the eighth circuit. The invention related to an ore-roasting furnace, and the claim read as follows:

"In an ore-roasting furnace having means for "stirring and advancing the ore, a supplemental "chamber *at the side of the* main roasting chamber "and cut off from said main chamber by a wall or "petition, and carriers in said supplemental cham-"bers connected with the stirrers, but removed from "the direct action of the heat, fumes and dust, sub-"stantially as herein described."

It will be observed that the language of this claim required that the supplemental chamber should be located *at the side* of the main roasting chamber. It was so shown in the drawings and described in the specification without any statement or intimation that it could be located at any other place. The defendant had located his supplemental chamber *under* the main chamber instead of *at the side,* and the question was whether the claim must be limited by the language used to a supplemental chamber, placed at the side of the main chamber, or whether it could be construed to cover a chamber placed underneath, instead of at the side of the main chamber.

The court found that the invention was of a pioneer character, and, consequently, held that the claim was not limited to a supplemental chamber placed at the side of the main chamber, but was sufficient to cover one placed underneath. The judgment went for the patentee. If the court had found that the invention was not of a pioneer character, then the claim would have been limited to the language used and no infringement would have been adjudged.

Another instructive case is that of *McCormick Harvesting Machine Co.* vs. *Aultman,* 69 Fed. Rep., 371, decided by the circuit court of appeals for the sixth circuit, wherein the opinion was rendered by Judge Taft. The invention was for a grain binder, and the claims were most narrow and specific in terms, reading as follows:

"3. The reciprocating segments C_4, having the "feed teeth C6, in combination with the guides D, as "and for the purpose specified.

"10. The flexible strap g, arranged in receptacles G, to operate the trip lever H, in the manner "substantially as and for the purposes described.

"11. The combination of the binding strap and "cord g, with the bundle receptacle G, and tooth-"feeding segments C_4, substantially as and for the "purpose described."

It was found by the court that these claims covered inventions of a pioneer character, and, consequently, they were given a broad construction, notwithstanding their specific language.

In deciding the case Judge Taft used the following language:

"It is further pressed upon the court that the mere "fact that the claims of the Gorham patent are ex- "pressed by reference to the lettered parts of the ma- "chine, as shown in the drawings, must lead to a lit- "eral and formal construction of the claims, and "limit their scope exactly to the form of the device "used and suggested by Gorham. * * * Wheth- "er he specifically claims in his patent the benefit of "equivalents or not, the law allows them to him "according to the nature of his patent. If it is a "mere improvement on a successful machine, a mere "tributary invention, or a device the novelty of "which is confined by the past art to the particular "form shown, the range of equivalents is narrowly "restricted. If it is a pioneer patent with a new re- "sult, the range is very wide, and is not restricted "by the failure of the patentee to describe and claim "combinations of equivalents. Nothing will restrict "a pioneer patentee's rights in this regard save the "use of language in his specifications and claims "which permit no other reasonable construction "than one attributing to the patentee *a positive in-* "*tention* to limit the scope of his invention in some "particular to the exact form of the device he

"showed, and a consequent willingness to abandon "to the public any other form, should it be adopted "and prove useful."

Hundreds of other cases of similar import might be cited; but we trust that our contention is made sufficiently clear, and therefore we shall not weary the court with further citations.

But irrespective of the above considerations, does the language of the Cramer claim, as a mere matter of language, compel a narrow construction? This brings us to the third step in our argument, viz:

3. CONSIDERATION OF THE CRAMER CLAIM IN THE LIGHT OF ITS TECHNICAL LANGUAGE AND AS A MERE MATTER OF LANGUAGE.

It is insisted by our learned adversaries that the specific language of Cramer's claim is such as to compel a narrow construction; but a careful analysis of the matter will demonstrate the fallacy of this contention. The argument advanced is that one of the elements of the combination is the term "trunnions," and that the defendant's machine has no trunnions.

Be it remarked *in limine* that this term is a technical term, and the aid of experts was required to explain it. Much evidence *pro* and *con* was offered at

the trial. Experts were produced on both sides, and their testimony was conflicting. Those for the plaintiff advanced one theory, while those for the defendant advanced a different one. This conflicting evidence was very properly submitted to the jury, who decided in favor of the plaintiff's theory. Consequently, that decision cannot be reviewed here, because it was the finding of a jury on a contested issue of fact. This, in our opinion, ought to end the matter; but for fear that our adversaries may accuse us of endeavoring to shirk an issue by invoking a technical rule of appellate practice, we proceed to show the ground on which the jury decided this point.

The definition of the term "trunnion" given in Knight's mechanical dictionary, a standard authority, is as follows:

"Trunnion. 1. (Steam engine.) One of the hol-
"low axes on which the cylinder of an oscillating en-
"gine reciprocates and through which steam is re-
"ceived and exhausted.

"2. (Ordnance). One of the cylindrical projec-
"tions from the sides of a cannon or mortar, which
"rests in the cheeks of the carriage, forming sup-
"ports for the piece and an axis on which it turns
"during elevation and depression. The trunnion is
"usually one calibre in diameter and length.

"3. A general term for an axis of similar char-
"acter to the above."

Test. of L. W. Seely (Rec., 126).

The first of these definitions may be disregarded, as it is technical and special. The second one, while relating specifically to a cannon, or mortar, points out two essential attributes which characterize the term, viz: Acting as supports for the gun and an axis of elevation and depression. The third definition is the broadest in that it applies the term to an axis of similar character when used in any kind of machine. Now as the trunnions of a cannon are used, according to the definition, only for the two purposes of supporting the gun and serving as an axis on which it oscillates during elevation and depression, this third definition includes a device in any and all kinds of machines, which operates as such *support* and as such *axis*. Those are the two essential attributes of a trunnion, the characteristics which determine whether a given device is a trunnion. In this sense the term trunnion is used in Cramer's claim. The things or devices in his sewing machine which he designates as trunnions act as supports for the treadle and as an axis on which the treadle turns during elevation and depression. This

'brings them within the purview of Knight's third definition. It is immaterial by what name those things or devices be called. The material point of inquiry is as to their characteristics and functions. If, instead of using the term trunnions, the claim had said "devices forming supports for the treadle "and an axis on which it turns during elevation and "depression," no different meaning would have been conveyed. That expression is equivalent to the word trunnions as used in the claim.

So much for the term "trunnions." But the claim says further that the treadle is "fitted to oscillate in "said bearings." The word "fitted" means simply "adapted," and is free from ambiguity.

The expression "to oscillate in said bearings" requires a word of explanation. In mechanics the word "bearings" *ex vi termini* includes the idea of oscillation or movement of some kind. Consequently, when a device is "adapted to oscillate in bearings," it is merely "mounted in bearings," because when mounted in bearings it necessarily is "adapt-"ed to oscillate in said bearings." It cannot be so mounted without having such adaptability.

Now as the bearings in the Cramer machine are located in the lower ends of the vertical brace, and

as the specific character of those bearings is unimportant, so far as the actual invention is concerned, the expression "fitted to oscillate in said bearings" is the equivalent of the expression "mounted in the "lower ends of the vertical brace by some kind of "bearings." If our reasoning be sound, then the expression "a treadle provided with trunnions fitted "to oscillate in said bearings," found in Cramer's claim and constituting the bone of contention in this case, must be construed as the equivalent of the expression *a treadle provided with devices forming supports for it and an axis on which it turns during elevation and depression, and mounted in the lower ends of the vertical brace by some kind of bearings.*

This language, while somewhat wordy, shows clearly the meaning of the claim. Later on we shall show that it fits the Singer machine as accurately as it fits the Cramer.

In view of the foregoing, we submit that in framing his claim in the specific form shown in his patent Cramer is strictly within the letter of the law, and cannot be deprived of the fruits of his valuable invention by the over-nice distinctions and technical refinements of language which our adversaries put forth.

These facts, we submit, are undeniable, viz:

1. That the invention made by Cramer is broad and pioneer in character.

2. That it is of exceeding great value and a substantial contribution to the art.

3. That it is claimed in the manner directed by the statute.

4. That in order to secure to the patentee the full fruits of his valuable invention it must be construed broadly in the way we have suggested.

5. That, if construed narrowly in the way suggested by our adversaries, the patentee will lose the full benefits of the invention.

6. That there is no manifest intention on the face of the patent to abandon and dedicate to the public the broad feature thereof.

In conclusion we beg leave to advert to that cardinal rule of patent construction announced by this court through Mr. Justice Clifford many years ago in the case of *Turrill* vs. *Railroad Co.* (1 Wall., 510):

"Patents for inventions are not to be treated as "mere monopolies, and, therefore, odious in the eyes "of the law; but are to receive a liberal construc-

"tion, and under the fair application of the rule "*ut res magis valeat quam pereat,* are if practicable, "to be so interpreted as not to destroy the right of "the inventor."

And we also refer to the equally felicitous language of Mr. Justice Swayne, in *Rubber Co.* vs. *Goodyear* (9 Wall., 988):

"A patent should be construed in a liberal spirit "to sustain the just claims of the inventor. This "principle is not to be carried so far as to exclude "what it is, or to interpolate anything which it does "not contain. But liberality, rather than strictness, "should prevail where the fate of a patent is in-"volved, and the question to be decided is whether "the inventor shall hold or lose the fruits of his "genius and labors."

4. CONSTRUCTION OF THE PATENT IN THE LIGHT OF THE FILE-WRAPPER CONTENTS.

It is urged by our learned opponents that Cramer's claim must receive a limited construction because of the Patent Office proceedings, and they have put in evidence Cramer's file-wrapper contents (Rec., 194-202) in support of that contention. But so far from supporting that theory the document tends to prove just the opposite.

In this regard the precise contention is that the file-wrapper contents show that the invention is a

narrow one, limited to knife-edge bearings and loop holes in the lower ends of the vertical brace to act as seats for the knife-edge bearings.

We are aware of the rule of law which prohibits a patentee from insisting upon a broad construction of his claim in court, which he admitted in the Patent Office to be a narrow one and which was allowed by the Patent Office by virtue of such limitation. In other words, if an applicant asks for a broad claim in the Patent Office and is rejected upon references, and therefore amends his claim for the purposes of avoiding the references, making it a narrow one, and thereby acquiescing in the correctness of the Patent Office ruling, he cannot afterwards, when he gets into court, insist on the broad construction of his claim which he disavowed in the Patent Office. Under such circumstances he must abide by the limitations placed on the claim by the Patent Office and acquiesced in by him.

The converse of this ruling is equally true, viz: Where an applicant first asks in the Patent Office for a narrow claim and afterwards amends it by making it broader, and the broad claim is finally allowed, then the Patent Office proceedings furnish the strongest evidence of the correctness of the broad

construction. And this process of changing and amending and broadening his claim may be practiced by the applicant until the final allowance, so long as he does not make the claim broader than his actual invention. He may strike out the whole or any part of his specification. He may change his claim by either substraction or addition. He may add entirely new claims from time to time, and in fact may do anything which tends to the securing of a claim commensurate with his actual invention. It is not necessary to cite authorities to sustain these elementary principles; it is only necessary to apply them to the facts in hand.

Turning now to Cramer's file-wrapper contents, we find that not only did he not narrow or limit his claim, as originally presented, in order to secure its issuance, but, on the contrary, he broadened it from time to time until he procured the one appearing in his patent.

Cramer's original application was drawn by a firm of country lawyers, Street & Street, who lived at Sonora, a small town of Tuolumne county, in the backwoods of California. This firm of country lawyers had probably never seen a patent in their lives; certainly they had never drafted an application for

one. The application which they drafted for Cramer's patent, as was to be expected under the circumstances, was of the most informal character. It read as follows:

CRAMER'S FIRST SPECIFICATION.

"I, Herman Cramer, of the city of Sonora, in Tu-"olumne county, in the State of California, have "invented certain improvements in a treadle to be "used in sewing machines, or other machinery "where a noiseless treadle may be required, of "which the following is a specification:

"My invention consists of the usual platform "marked 'A' in Fig. 1 of diagram on treadle bar. "The ends of said treadle bar, marked 'B,' are "shaped like the letter V and rest in socket in lower "end of a brace 'C,' the socket being ♡ shaped, "the brace 'C' cast in one piece, and the treadle bar "and platform on the bar is also cast in one piece.

"The treadle bar rests in socket in brace 'C,' "which is immediately above a cross-brace usually "in machines to keep them from spreading apart, "the nut on end of cross-brace is marked 'D.' Let-"ter 'M' immediately beneath cross-brace and "treadle bar is an oil-receiver to retain any drip-"pings of oil from the bearings of treadle bar.

"My invention consists in having the ends of the "treadle bar V-shaped to fit in hole in brace 'C,' also "♡ shaped to receive the ends of the treadle "bar.

"This V-shaped treadle bar in brace 'C,' entirely

" prevents noise from the treadle, is self-adjusting, " and does away with the necessity of cones and set- " screws now in use. This I claim as my invention. " Fig. 1 represents platform 'A' and treadle bar, the " ends of which are V-shaped and marked 'B.'

" Fig. 2 represents the lower end of brace 'C' with " hole ♡ shaped to receive the ends of the treadle " bar 'B.' 'D' represents nut on end of cross-brace " immediately below treadle bar.

" HERMAN CRAMER.

Witnesses:

FRANK W. STREET.
CHARLES L. STREET."

" State of California,

" County of Tuolumne.

" Herman Cramer, the above-named petitioner, " being duly sworn, deposes and says that he verily " believes himself to be the original and first in- " ventor of the improvement in a noiseless self-ad- " justing treadle described in the foregoing specifi- " cations, that he does not know and does not believe " that the same was ever before known or used and " that he is a citzen of the United States.

" HERMAN CRAMER.

" Subscribed and sworn to before me this 15th day " of May, A. D. 1882.

" C. L. STREET,
" Notary Public."

This specification was not in conformity with the rules of the Patent Office: it contained no claim whatever, and the oath was incomplete. The answer

which the examiner made to the application was as follows:

"United States Patent Office,
"Washington, D. C., May 29, 1882.

"Treadle for sewing machine, etc. Filed May 25, 1882. No. 62,397.

"Herman Cramer, care Street & Street, Sonora, "Cal.:

"The application is not prepared in conformity "with the rules of the office. The specification is "written on both sides of the pages, while the rules "direct that it should be written on one side of each "page only.

"No claim is appended to the specification The "oath is incomplete, as Section 39 of the rules re- "quire—applicants to state under oath if the inven- "tion has been patented to them, or with their "knowledge and consent to others in any foreign "country, and if so, the number, date and place of "such patent or patents. Reference is made to the "patent to G. W. Gregory, No. 256,563, April 18, "1882, which exhibits the alleged invention.

"A. SCHOEPF, Examiner."

Permit us to pause a moment at this point to see what we can gather from Cramer's first specification. Informal and insufficient as it was, drawn by unskilled attorneys unfamiliar with patent law or the rules of the patent office, we nevertheless can find therein the fundamental idea and gist of the invention. In that specification it is said:

"The ends of the treadle-bar marked 'B' are "shaped like the letter V, and rest in sockets *in lower "end of a brace 'C.'*

Again, it is there said:

"The treadle-bar rests in sockets *in brace 'C'* "which is immediately above a cross-brace usually "in machines to keep them from spreading apart."

Again, it is there said:

"This V-shaped treadle-bar *in brace 'C'* entirely "prevents noise from the treadle, is self-adjusting, "and *does away with the necessity of cones and set-"screws now used. This I claim as my invention."* The italics used are ours.

Mr. Robinson in his work on patents says that the fundamental idea of an invention is an "idea of means." The quotations made above show that Cramer's "idea of means" was that of a treadle mounted in the vertical brace in contradistinction to those which had theretofore been mounted upon the tie-rod (referred to as a cross-bar), using cones and set-screws. His idea was not to mount the treadle in the legs, because he does not mention the legs, nor to mount it on the tie-rod (cross-bar) as had been formerly done, because he says that his construction "does away with the necessity of cones and "set-screws now in use," and cones and set-screws at

that time were not in use except on the tie-rod. The law does not presume that either Cramer or his country attorneys were rhetoricians, nor does it cast any reflection on them, because they were not versed in patent practice. It merely presumes that they were acquainted with the prior art, and the prior art used cones and set-screws on the tie-rod. Hence, if the idea of cones and set-screws is repudiated, the tie-rod is repudiated with them. There are but three parts of a sewing machine upon which a treadle can be mounted, viz: the tie-rod, the legs, and the vertical brace. In Cramer's first specification, crudely drawn as it is, he shows that neither the tie-rod, nor the legs formed part of his idea of means. We assert, therefore, that the fundamental idea of means shown in this first specification was that of a treadle mounted in the vertical brace, and from that idea the patentee has never departed.

We go back now to the patent office proceedings. In answer to the examiner's letter hereinabove quoted, Messrs. Street & Street prepared an amended specification. The office letter had given them their first lesson in patent office practice. The examiner pointed out that there must be a claim. Evidently they considered that this claim was nothing more

than an expression in language of the entire mechanical device. Consequently, they wrote the following as the claim for the new specification, viz:

"What I claim is the combination of brace 'C' "with sockets or bearings in it or on it to receive the "treadle-bar with the mufflers at the ends of treadle-"bar or in or on brace 'C' and the treadle-bar in "connection with brace 'C' and mufflers to work in "or on brace 'C' substantially as set forth."

This confused jumble of words, loosely and awkwardly thrown together to constitute a claim, was as bad as the absence of any claim at all. It is in effect an attempt at two claims in one, the first for the treadle and brace, the second for the mufflers inserted in it. Of course this was bad practice; but with all its crudity the salient features are clear. He had invented two things. The first was the mounting of the treadle in the brace; the second was the use of mufflers. These two together constituted his entire machine, and apparently the country attorneys thought that the whole machine must be put into one claim. They do not seem to have known that they were entitled to two claims, one for each of the features above named. The entire amended specification is as follows:

CRAMER'S AMENDED SPECIFICATION.

"I, Herman Cramer, of the city of Sonora, in "Tuolumne County, in the State of California, have "invented certain improvements in a treadle and "brace to be used in sewing machines or other ma- "chinery where a noiseless treadle may be required, "of which the following is a specification.

"My invention consists in a combination of the "usual platform marked 'A' in Figure 1 of diagram "on treadle-bar. The ends of said treadle-bar "marked 'B' are to bear against mufflers.

"The treadle-bar bearings are in and on brace 'C.' "The treadle-bar rests in socket in brace 'C' which "is immediately above a cross-bar usually in ma- "chines to keep them from spreading apart.

"The nut on end of cross-bar is marked 'D.' Let- "ter 'M' immediately beneath cross-bar and treadle- "bar is an oil-receiver to retain any drippings of oil "from the bearings of treadle-bar.

"The treadle-bar, mufflers and brace 'C' are held "between the right and left legs of the machine by "means of a brace bar underneath the treadle-bar.

"This brace and socket or bearing in or on brace "is in one piece.

"The treadle-bar with mufflers on the ends work- "ing or bearing in or on brace entirely prevents noise "from the treadle- is self-adjusting and does away "with the necessity for cones and set-screws now in "use.

"Figure 1 represents platform 'A' and treadle- "bar, the end of which may be V-shaped or any "shape to suit, marked 'B.'

" Figure 2 represents the lower end of brace 'C.'
" 'D' represents nut on end of cross-bar immedi-
" ately below the treadle-bar.

"What I claim is a combination of brace 'C' with
" sockets or bearings in it or on it, to receive the trea-
" dle-bar with the mufflers at the ends of treadle-bar
" or in or on brace 'C' and the treadle bar in connec-
" tion with brace 'C,' and mufflers to work in or on
" brace 'C' substantially as set forth.

" HERMAN CRAMER."

"Witnesses:

"CHARLES L. STREET.
" FRANK W. STREET."

That the original idea of means, viz, a treadle mounted in the brace, was not changed by this amended specification is apparent. In said specification he said:

"I, Herman Cramer, * * * have invented
" certain improvements in a *treadle and brace* to be
" used in sewing machines or other machinery where
" a noiseless treadle may be required."

Here we have the combination of the treadle and brace, no mention being made of the mufflers which are described later on.

Again, the amended specification says:

" The treadle-bar bearings are *in and on brace*
" *'C.'* The treadle-bar rests in socket *in brace 'C,'*
" which is immediately above a cross-bar usually in

"machines to keep them from spreading apart. "* * * This brace and socket or bearing in or "on brace is in one piece. * * * Figure 1 rep- "resents platform 'A' and treadle-bar, the ends of "which *may* be V-shaped or *any shape to suit,* "marked 'B.'"

So far from placing any limitations and provisos on his invention in this specification Cramer actually broadened his language in order to make it more nearly commensurate with his actual invention. He practically says that his invention consists in the combination of the treadle and brace; also he practically says that the treadle bearings are mounted in or on the brace and that the ends of the treadle-bar, styled in the subsequent specifications *trunnions,* may be V-shaped, *or any shape to suit.* In other words, he did not confine his bearings to those of the knife-edge form. He only said they might be of that form, and then added that they may be *of any shape to suit.*

The only thing in this amended specification partaking of a limitation is the inclusion of the mufflers as an element in the claim; but we have already shown the probable way in which the claim was drawn by unskilled attorneys having no knowledge of the patent law or patent office practice. So that it is quite apparent that the inclusion of these muf-

fiers in the claim was due entirely to ignorance of patent law. Subsequent events prove this surmise. In any event the claim was afterwards broadened and not narrowed in order to get the patent.

In answer to this amended specification the patent office sent the following letter:

"United States Patent Office,
"Washington, August 14th, 1882.

"Treadle. Filed May 25th, 1882. No. 62,397.

"HERMAN CRAMER, care Street & Street, Sonora, Cal.:

"Applicant's amended claims are met by the pat-
"ent to J. E. Donovan, June 28, 1881, No. 243,529,
"in view of which a patent is again refused."

Upon receipt of this communication Cramer and his country attorneys evidently concluded that they had gotten beyond their depth and that patent practice was not their forte; for the next thing that Cramer did was to take the case out of the hands of Street & Street and appoint Munn & Co., of New York, his solicitors, as appears by the following communication in the files.

"I hereby appoint O. D. Munn and A. E. Beach,
"the firm of Munn & Co., of the cities of New
"York and Washington, or their accredited agents,
"to withdraw the specifications and drawings of my
"application for letters patent for sewing machine

" treadle filed on or about May 25, 1882, serial No.
" 62,397, and to make such amendments and to the
" same extent transact such other business with the
" department pertaining to this application as is vest-
" ed in Messrs. Street & Street, of Sonora, Cal.,
' whose power of attorney attached to the specifica-
" tion aforesaid, is hereby revoked."

From this time on everything was plain sailing. Munn & Co. amended the old specification by erasing everything above the signature and filing an entirely new specification in its stead, which constitutes the specification of the patent as allowed.

In this new specification they disclaimed the V-shaped bearings in as plain words as can be found in the English language, and they separated Cramer's omnibus claim into two separate and independent claims in order to protect the two independent inventions.

In connection with this new specification Munn & Co. filed an argument which is as follows:

"Gregory, referred to, pivots the grooved trun-
" nions of his treadle upon knife-edges secured with-
" in the upper loops of two collars, which are se-
" cured to the cross-bar by means of set-screws to
" keep them from turning. Donovan pivots his
" treadle upon its trunnions having sharpened edges,
" in grooves in the cross-bar, where it is held by col-
" lars provided with flanges projecting over the trun-

"nions. Applicant pivots his treadle upon the "sharpened edges of its trunnions in loop-holes in "the two ends of the brace which is bolted to the "legs of the machine by the two ends of the cross-"bar. This service of the cross-bar might be as well "performed by two short bolts; but the bar being a "usual cross-tie to stiffen the legs, applicant uses "its ends as bolts to hold his brace ends to the legs. "We have rewritten the specification to elucidate "the inventor's claim. Should the case meet with "favorable consideration a new drawing will be "furnished. For the purpose of examination see "pencil sketch on sheet of drawing filed.

"Your ob't servants, MUNN & Co."

In this argument Munn & Co., pointed out the fact that in the references cited by the examiner the treadle was mounted on the tie-rod, whereas Cramer mounted his treadle in the vertical brace.

The examiner again rejected the application in the following communication:

"The case has been reconsidered in connection "with the substituted specification filed the 17th "inst., and the examiner holds that the references "previously cited—that of Gregory in particular— "meets the alleged invention. The case is accord-"ingly rejected." Signed by the Examiner.

Thereupon Munn & Co. filed with the examiner the following argument:

"The examiner will please take notice that ap-
"plicant's invention places both bearings of the trea-
"dle in the cross-brace. By this means they may be
"made perfectly true in line, either by casting or
"drilling, and they cannot be thrown out of line
"either by use or by the most awkward setting up.

"Therefore, one source of friction is avoided. All
"the references shown have bearings made of two
"separate pieces which could readily be set up out
"of line or even be worked loose. The advantage is
"obvious.

"A reconsideration is respectfully asked.

"Your obedient servants,

"MUNN & CO."

In this argument Munn & Co. point out very clearly the essence of the Cramer invention, showing that it consists substantially in mounting the treadle in the vertical brace, whereby the bearings "may be "made perfectly true in line either by casting or "drilling, and they cannot be thrown out of line "either by use or by the most awkward setting up."

This argument proved conclusive, and the patent was allowed. It will be observed that Cramer's application was originally rejected on the patent of Gregory of 1882, and that of Donovan of 1881.

If these references had borne any relevancy to the Cramer invention, they could have been avoided by an affidavit of priority. We have already seen that

Cramer's invention was made in June, 1880. Consequently, neither Gregory nor Donovan could limit the scope of that invention. Probably Munn & Co. were not aware of the fact that Cramer's invention was made as early as 1880, and therefore, they showed to the examiner that said invention was not anticipated by Gregory or Donovan. In this theory of no anticipation they were undoubtedly correct, for neither Gregory nor Donovan shows the Cramer invention. In neither of those references is the treadle mounted in the vertical brace. On the contrary, they show the treadle mounted on the tie-rod and in the legs by the use of knife-edge bearings. It was evidently by reason of the use of knife-edge bearings in these prior references that the examiner cited them against Cramer, and it is apparent that the examiner misconceived the Cramer invention at first. He thought it consisted in the use of knife-edge bearings, and this belief was induced by the loose expressions contained in the original specification. But Munn & Co. showed to the examiner that the invention did not consist in the use of knife-edge bearings and they put into the patent an unequivocal disclaimer thereof. As soon as this was done the examiner allowed the claim.

We thus see that throughout all the patent office

proceedings Cramer consistently "stuck to his text," arguing and successfully maintaining that his invention consisted in mounting the treadle in the vertical brace. Through the ignorance of his attorneys he first proposed no claim at all, then an omnibus claim for the whole machine, which was necessarily a narrow one, and finally a broad claim which was allowed. There is absolutely nothing in this file wrapper placing Cramer in the category of those inventors who first ask for a broad claim, and when cited to anticipations, narrow their claim in order to avoid the references. On the contrary, we think it manifest that Cramer broadened his claim, instead of narrowing it, and during his entire journey through the patent office consistently adhered to the position which he now contends for.

Before leaving this branch of the case, one other matter demands attention, and that is

JUDGE MCKENNA'S DECISION IN CRAMER *vs.* FRY, 68 FED., 201.

Were we disposed to be technical and narrow-minded, we might argue that said decision of Judge McKenna should not be considered by this court, inasmuch as it was rendered by a *nisi prius* court, and the construction of the patent therein adopted

was afterwards disapproved by the court of appeals. But, in view of the known ability of the learned judge who rendered the Cramer-Fry decision, as well as the fact that he is now an honored member of this court, a due respect for the proprieties impel us to waive all technicalities, and to say a word concerning the merits of that decision.

The gist of that decision is that the Cramer invention is an exceedingly narrow one, limited to the specific devices shown, and is not entitled to the doctrine of equivalents to any extent whatever.

In determining whether one case is conclusive of another, the first and primary question is: Are the facts of the two cases the same? The law depends on the facts, and it is not infrequent to see the same patent sustained in one case and avoided in another, by reason of variance in the facts of the two cases. A notable instance of this is found in the cases of the "driven-well" patent. In *Eames* vs. *Andrews,* 122 U. S., 40, and *Beedle* vs. *Bennett,* Id., 71, this court, on the facts there presented, held the patent valid. But in the subsequent case of *Andrews* vs. *Hovey* (123 U. S., 267), on a different state of facts, the patent was held invalid. Naturally, therefore, the first question which arises here is whether or not

the facts shown in the Fry case are substantially the same as in the case at bar.

There is nothing in this record to show that the facts proven regarding the scope and character of the Cramer invention are the same as those proven in the Fry case. None of the testimony which was taken in the Fry case—other than certain depositions on the subject of anticipation, hereinafter noted—was put in evidence in the present case, and we are wholly in the dark as to what was the evidence on that subject in the Fry case. The judgment-roll from the Fry case was put in evidence; but that consisted merely of the pleadings, verdict, and judgment, and does not enlighten us on the subject. It shows what were the issues raised, but not what was the evidence adduced in support of those issues.

Under these circumstances, how is it possible for the Cramer-Fry decision to have any controlling effect here? So far as this record shows, it may be that the only evidence adduced in that case was the Cramer patent and the infringing structure, without any evidence whatever from experts explaining the two constructions as to similarities and differences, and without any evidence as to the date of Cramer's invention or the state of the art. In a word, there is

nothing to show that the evidence in the two cases was substantially the same. If the defendant desired to invoke the decision in the Fry case, it was its duty to put in evidence not only the judgment-roll, showing that the *issues* were the same, but also the transcript of the reporter's notes of the evidence taken at the trial of the Fry case, in order to show that the *facts* likewise were the same, or substantially the same. This was not done. Only the judgment-roll was put in evidence.

As a matter of fact, the evidence in the two cases was as different as black is from white, and there is no question in our minds that, if the evidence in the case at bar had been introduced in the Fry case, the decision of Judge McKenna would have been the same as the decision of Judge Morrow. It cannot be presumed that two such eminent trial judges would render diametrically opposite decisions on the same state of facts, and the only reasonable view to take of the Cramer-Fry decision is, that it was not based on the same evidence and facts as the case at bar.

On reading the Cramer-Fry decision, it will be seen that the learned judge there presiding examined merely the Cramer patent on its face and the file-

wrapper contents, and from those premises deduced the conclusion that the invention was an exceedingly narrow one, and, consequently, that the claim must receive a narrow construction, limited to the exact details shown, and not entitled in an manner whatever to the doctrine of equivalents. If the evidence in that case had shown, as it does in the case at bar, that the actual invention made by Cramer was a broad one; that, prior to his invention, all treadles for sewing machines had been mounted either in the legs or on the tie-rod, by means of cones and set-screws, and that both of said old styles of mounting were liable to serious objections; also, that Cramer was the first in the art to mount a treadle in the vertical brace, and that by such construction he obviated the defects of the prior art in that regard, then it is apparent that the conclusion drawn in the Fry case would have been a *non sequitur*. Who is there will attribute to his Honor, Judge McKenna, such faulty reasoning on such statement of facts? Certainly not ourselves; for we have too high a regard for his judicial attainments. The authorities cited by him in the Fry case are invoked by us in this behalf. They hold that where the invention is a broad one, it must receive a broad construction;

where narrow, a narrow construction. The evidence alone can determine the scope of the actual invention. Hence it is reasonable to conclude that the evidence in the Fry case tended to show a narrow invention. But in the case at bar, beyond all question, the evidence tends to show a broad invention.

Again, suppose that at the trial of the Fry case Cramer's models of June, 1880, had been introduced in evidence, and that the testimony of himself, his son, and his daughter, which is uncontradicted, showing that his invention was made as early as June, 1880, had been adduced, who is there can doubt that this would have had a controlling influence on the decision? We do know this much from the record in the present case, that the defendant in the Fry case produced depositions from many witnesses at Chicago tending to show that a treadle mounted on point-centers in the vertical brace, substantially in the same way as the present mounting of the treadle in the Singer machine, was used by George Bent, at Chicago, in the years 1881 and '82. We know this because those same depositions were by stipulation, admitted in evidence at the trial of the case at bar. (Rec., 229 *et seq.*) Those depositions undoubtedly tended to show anticipation of the

broad feature of the Cramer invention, and it must be assumed that the trial judge in the Fry case gave full faith and credence to the same in holding that Cramer's invention was a narrow one. There is no evidence here to show that at the trial of the Fry case said anticipating evidence was met in any way whatever, whereas the record does affirmatively show that at the trial of the case at bar said evidence was successfully met and completely overthrown by conclusive proof of the fact that the Cramer invention ante-dated, by at least one year, the said anticipating evidence. This fact alone is a sufficient answer to the Cramer-Fry decision, for it must be conceded that if said anticipating evidence had been successfully met in the Cramer-Fry case, the learned judge who tried it could not have held that the Cramer invention was a narrow one. In view of all these facts, it follows that the Cramer-Fry decision must be thrown out of consideration, on the ground that it does not appear to have been based on the same facts as the case at bar. It is not necessary for us to review or attempt to overthrow that decision. It may even be conceded to be correct on the facts presented therein, just as the decision of this court in *Eames* vs. *Andrews* must be conceded to be cor-

rect on the facts there presented. But the fate of the patent may be changed in another case on a different state of facts, as was done in the case of *Andrews* vs. *Hovey*. It was solely on account of this different state of facts that the present suit was brought.

The truth of the matter is, that the Cramer-Fry case was improperly presented on behalf of the plaintiff. The proper evidence was not supplied; the vital facts were not shown; and it is not to be wondered at that on such a maimed and impotent record the court decided as it did. But the case at bar is on a different footing. The proper evidence has been supplied. The vital facts have been shown. In a word, this case is presented on an entirely different state of facts from those shown in *Cramer* vs. *Fry*.

Another point must be remembered: this case comes from the lower court by writ of error in an action at law. Consequently, the burden is on the Singer Company to show affirmatively that the Cramer-Fry case was tried on the same facts as the case at bar before they can invoke that decision. Not only have they failed to do this, but they have not even attempted it. He who alleges error must show

it affirmatively, and cannot rely on inference or conjecture in that regard.

Again, no error can be urged except by way of a specification of error, and there is no specification of error in this record aimed at this particular point.

THE INFRINGING MACHINE.

Having disposed of the matter of the construction of Cramer's claim, we come now to the crucial point in the case, a comparison of the defendant's structure with the Cramer patent.

The defendant's machine, which is charged to be an infringement, is made under letters patent No. 306,469, issued to the Singer Manufacturing Company, as assignee of Philip Diehl, October 14, 1884. It is hereinafter referred to as the "Diehl machine."

Before analyzing this machine, it may not be out of place to recall the salient facts leading up to the infringement. Cramer applied for his patent on May 25, 1882, and it was issued on January 30, 1883. On February 8, 1883, Cramer sent to the Singer Manufacturing Company the following letter, shown at page 46 of Record, viz:

"Sonora, Cal., Feb. 8, '83.

" The Singer Mfg. Co.

"Dear Sirs: Having invented one of the most

"improved sewing machine treadles, I desire to call "your attention to its merits. To make your ma- "chine the most complete of any sewing machine in "the market, I think you should embody my im- "provement in your machine.

"My patent treadle consists of a brace and treadle "working in combination with each other. It is "frictionless as can be, noiseless, self-adjusting, al- "ways in line, most cheap, never needs readjusting, "does away with cones and set-screws and makes the "machine run a great deal lighter. I desire to sell "my patent, reserving the right to put them on all "machines I sell or to have you put them on your "machines and give me a royalty.

"Yours truly, H. CRAMER."

Two important facts are to be noticed in connection with this letter. The first is the statement, in substance, that the invention consists of *a brace and treadle* working in combination with each other, which clearly shows the construction placed by Cramer upon his invention at that time, and that is substantially the same construction which we are now urging. The second fact we note is that this letter called the attention of the Singer Company to the Cramer invention at the very earliest possible moment after the patent was granted, thereby giving them full opportunity to be informed of the same

and precluding any theory of "innocent infringement."

In answer to this letter, the Singer Company wrote Cramer the following:

"Office of the Singer Manufacturing Company, No.
"34 Union Square, New York, Feb'y 20th, 1883.
"Mr. H. Cramer—

"Dear Sir: Replying to yours of 8th inst., would "say that we receive copies of all sewing machine "patents as they issue. As soon as yours is out, if "after examination, we find anything of value in it "that we care to adopt, we will communicate with "you farther on the subject.

"Yours truly, THE SINGER MFG. CO.,
"W. F. Proctor, V. Prest." (Rec. 47.)

It would appear from this letter that the Singer Company had not at that time secured a copy of the Cramer patent, but it shows that they were intending to secure a copy as soon as possible.

The Singer Company had no further communication with Cramer concerning this matter, but they immediately put to work on the matter their head mechanic, Mr. Philip Diehl. Mr. Diehl was a mechanical expert in the factory of the Singer Company at Elizabethport, New Jersey, whose business appears to have been to get out patents for the company. (Rec., 161.) We find that on May 29, 1884,

Mr. Diehl filed his application for the patent which is herein charged to be an infringement, and assigned the same to the Singer Manufacturing Company. How long he was at work in devising and perfecting the invention does not appear from the record; but it is not a very violent presumption to indulge in that he was supplied with a copy of the Cramer patent and was told to devise an improved device of mounting the treadle in the vertical brace. Anyway, that is precisely what he did. The Diehl patent was issued on October 14th, 1884, and immediately thereafter the Singer Company began to place the device on the market. They had on hand at the time a large number of machines embodying the old method of treadle mounting, which it was necessary to dispose of first. That old form of treadle mounting was dispensed with by the sale of the stock on hand, and thereafter all the standard machines of the Singer Company were equipped with the Diehl device, and no change has been made to this day.

The device used by the Singer Company immediately preceding the advent of the Diehl device consisted in mounting the treadle in the legs of the machine, which, of course, was liable to the serious ob-

jections heretofore spoken of. The mounting which they had used prior to this last-named one was on the tie-rod with cones and set-screws. We therefore have the following suggestive facts in chronological order:

1. In 1880, the Singer Company was mounting its treadle on the tie-rod by means of cones and set-screws.

2. This style of mounting was found to be defective, and they changed it to a mounting in the legs, which form they used in 1881-2-3.

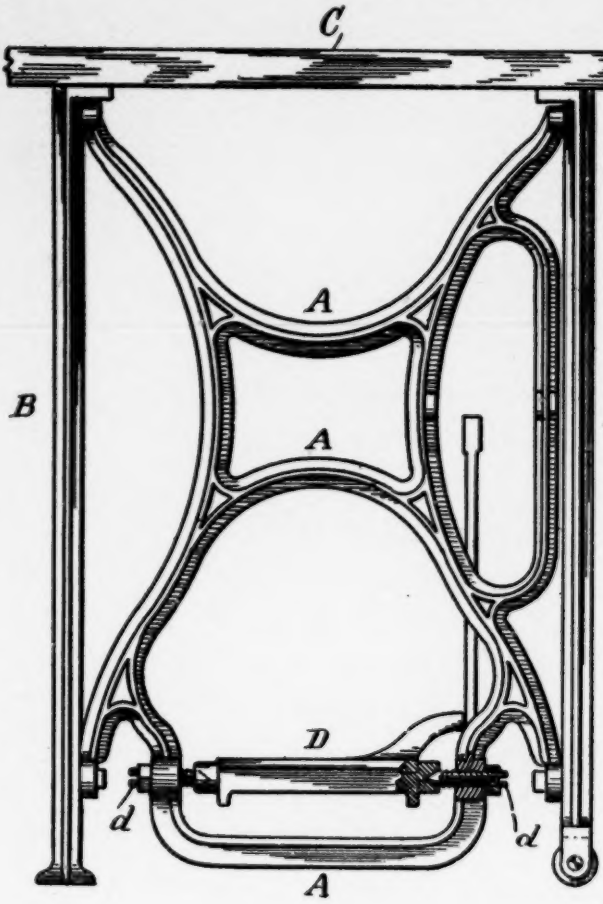
3. This style of mounting likewise was found defective, and the company was endeavoring to find a better one.

4. In January, 1883, the Cramer patent was issued, and the attention of the Singer Company was specially called thereto by the inventor.

5. Immediately following this, the mechanical expert of the Singer Company was set to work devising a new treadle mounting, and it is highly probable that in so doing he carefully studied the Cramer patent and got his ideas therefrom.

6. In May, 1884, the Singer Company, through Diehl, perfected a device for mounting the treadle in

The Diehl Machine, Infringing Device.



the vertical brace, and applied for a patent, which was issued in October, 1884.

7. This last treadle mounting overcame all the defects of the former ones used by the Singer Company, and proved to be highly efficient.

8. The Singer Company has continued to use said last named treadle mounting to this day, without any change, and has sold many millions of machines embracing the same.

While it is true that an infringement is an infringement, whether it be induced by inadvertence or design, nevertheless a willful and premeditated infringement is without any palliation whatever, and we have recited the above facts for the purpose of showing that the Singer Company embarked in this infringement with a full knowledge of the rights of Cramer, and apparently with the intent and design of appropriating the substance of his invention without right.

On the adjoining page will be found a cut, showing the stand of the infringing machine as illustrated by the Diehl patent. We have taken the liberty of lowering the cross-bar "A" a trifle further than it is lowered in the patent. We do this merely for the purpose of more clearly illustrating the device. It

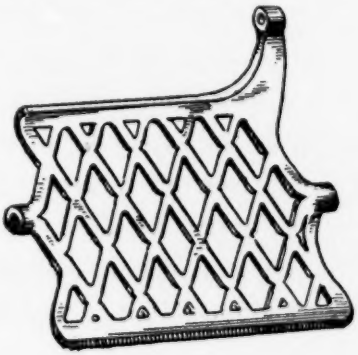
does not alter any of the principles of the machine whatever. In fact, it is stated in the patent that this cross-bar may be cut away entirely. In this Diehl machine there is found a double vertical brace joining the two legs of the sewing machine. This brace is a little different in form from the one shown in the Cramer patent drawing, but that fact is immaterial. It differs also in another unessential particular in being connected at its two lower ends by the cross-bar "A," which is made integral with the brace. The object of this cross-bar is to stiffen the structure, and the same office is performed in the Cramer machine by a tie-rod "D," the only difference between the two being, that in Cramer's case the tie-rod is not integral with the vertical brace. At the lower end of Diehl's brace, there are two lugs or projections cast with and constituting the lower end of the brace. Through the lower end of each of these lugs a threaded hole is made, and a screw-bolt with a pointed end is passed from the outside through the hole. The following cut will show the form of said screw-bolt:

Screw Bolt of Diehl's Machine.

The treadle is made with a short stumpy lug or projection on each side, corresponding to a trunnion, and in the end of each lug a counter-sunk conical hole is made, and the pointed ends of the screw-bolt are fitted therein, so that the treadle will oscillate up and down upon these bearings. Such a bearing is known in mechanics as a point-center bearing. It was old and well known in the art at the date of the Cramer invention.

The following cut represents the Diehl treadle, taken from the model of the defendant's machine which was put in evidence, and which is clearly represented by the cuts marked 101 and 102 in the 1885 circular of the Singer Manufacturing Company, opposite page 52 of the record.

Diehl's Treadle With Screw Bolts Removed.



It will be seen that the Diehl treadle is mounted in the double vertical brace, on point-center bearings, and of this there can be no dispute. The Diehl patent says this treadle is supported in the lower portion of said brace.

And in the Singer catalogue of 1885 it is said of the Diehl machine:

"The band wheel and treadle have their bearings
" entirely independent of the stand (or legs), there-
" by assuring a correct adjustment and easy action.
" This device prevents the 'building' which so often
" follows a slight displacement of the support of the
" machine, a difficulty rarely appreciated except by a
" skilled mechanic, which hitherto it has been con-
" sidered impossible to remedy."

And in another place in its catalogue, the Singer Company says that the treadle is "entirely supported " within the brace, insuring accurate adjustment and " ease of operation."

In the Diehl patent, the band-wheel is also mounted in the brace, and this is the only patentable feature in the Diehl machine, unless it be that invention may be predicated of the special form of brace shown, which is immaterial to this controversy. A reference to the claims of the Diehl patent will show that they are framed with the idea of

covering, broadly, mounting both the band-wheel and the treadle in the vertical brace. In other words, Diehl recognized at once the advantage of mounting the treadle in the brace as soon as he saw Cramer's patent, and he carried that idea a little further and conceived that a like advantage would follow if he mounted the band-wheel also in the vertical brace. In this he was clearly correct, and he secured a patent for the broad idea of mounting both treadle and band-wheel in the brace. Diehl adopted Cramer's fundamental idea of mounting the treadle in the brace, but effected that mounting by a different species of bearings, to-wit: point-center bearings, and the question is whether Diehl has so far taken the substance and essence of the Cramer invention as to amount to infringement.

In the Cramer machine, the treadle is provided with lugs or projections on each side, termed in the specification, trunnions. These devices are sharpened underneath into the form of a knife-edge, and project into V-shaped holes in the ends of the vertical brace, thereby presenting an illustration of that form of bearing known as a knife-edge bearing. The mechanical change which Diehl made was this: He took a Cramer treadle and cut off the trunnions

at the point where they are attached to the treadle, then inserted these trunnions from the outside, through holes in the lower ends of the vertical brace, and changed the knife-edge of these trunnions to a pointed end, at the same time placing conical holes in the treadle at the point where the trunnions had formerly been. In the Cramer construction, the bearings, technically so-called, are located in the brace, and they are of the knife-edge kind. In the Diehl construction, the bearings, technically so-called, are located in the treadle, and they are of the point-center kind. Thus we see that Diehl merely changed from knife-edge to point-center bearings, and reversed the position of those bearings.

These changes were merely structural, not functional, and did not avoid infringement. As far as the bearings are concerned, the point is too plain for argument. At the date of Cramer's invention, both knife-edge and point-center bearings were old in the art. (See testimony of Seely, Rec., 121-2.) The patent of Wilcox & Gibbs shows the existence of knife-edge bearings in a sewing machine stand as early as 1870. (Rec., 214.)

The patent of Lawlor, dated in 1882 (Rec.,.216), shows the identical threaded screw-bolt with point-

center bearings used in the Diehl construction, and it is beyond all dispute that such point-center bearings were old in mechanics prior to 1880. Beyond all controversy, therefore, knife-edge bearings and point-center bearings are mechanical equivalents. They both performed the same function in the same manner. The jury so decided as a question of fact. Neither Cramer invented the one, nor Diehl the other. They were both old in the art, and each inventor found them ready for use. Cramer selected one as the preferable form, while Diehl selected the other. Therefore, when Diehl changed Cramer's knife-edge bearings into point-center bearings he certainly did not, so far as the bearings themselves are concerned, avoid the Cramer patent, because he merely substituted for one of the elements of Cramer's claim a mechanical equivalent thereof. Were any confirmation needed for so palpable a proposition, we have merely to refer to the testimony of expert witnesses Seely and Brown.

At pages 121-2, Seely says:

"Many years before Cramer's time they were well "known mechanical equivalents of each other for all "purposes. One of them might, perhaps, be better "for a given purpose than the other, but it is a mat- "ter of choice entirely."

Brown says, at page 164:

"Point-center bearings and knife-edge bearings "were both old in the art prior to this. Ever since I "have known anything about them they have been "in existence, and long before that. You could sub- "stitute in the art one for the other, and produce the "same result. It is a matter of taste which one "would be used. Some persons might prefer a "knife-edge bearing, and others might prefer a "point-center bearing."

Regarding the other formal change which Diehl made, that likewise presents no difficulty. He changed the location of the bearing point from the brace to the treadle, without producing any change of function or result, or any new mode of operation. It was merely a reversal of parts.

In the case of a gate hook, it is immaterial whether the hook be attached to the gate, and the staple through which it is intended to pass be attached to the gate-post, or whether the staple be attached to the gate and the hook to the post. It is immaterial whether the male part of the hinge be fixed to a door and the female part to the door-post, or whether those parts be reversed as to position. It is a favorite trick with infringers to reverse the two parts which go to make up the combination, hoping thereby to

Fig. 1.

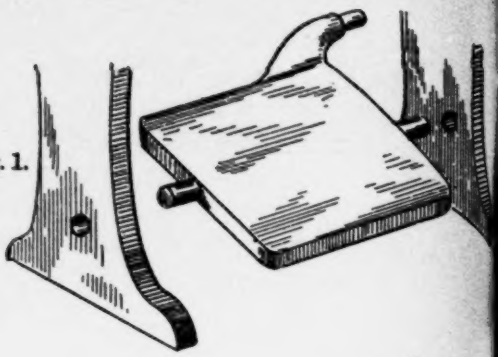


Fig. 2.

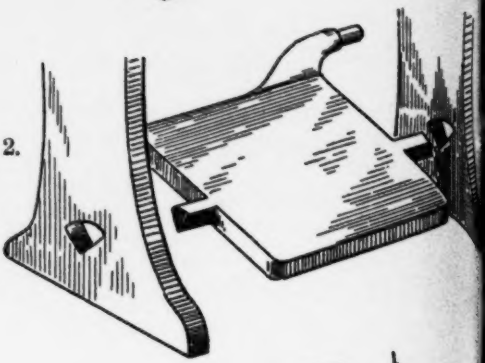
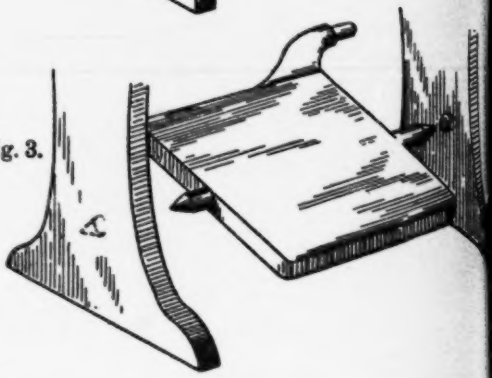


Fig. 3.



Showing Different

nting.

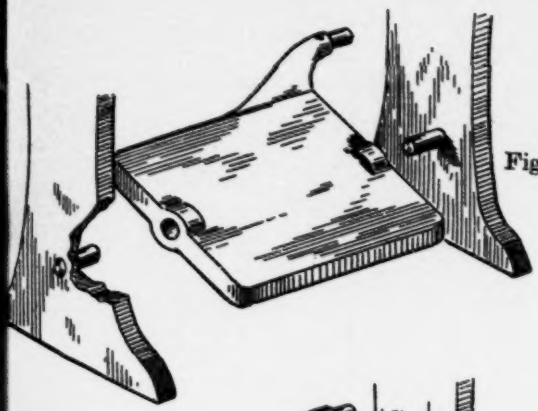


Fig. 4.

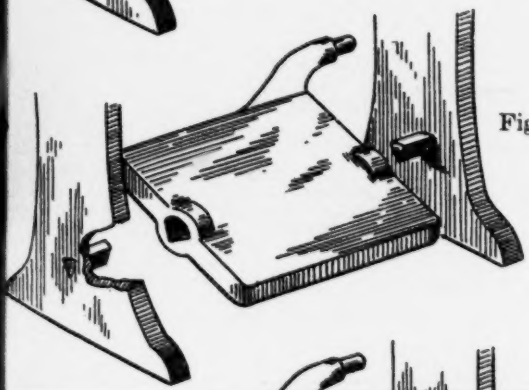


Fig. 5.

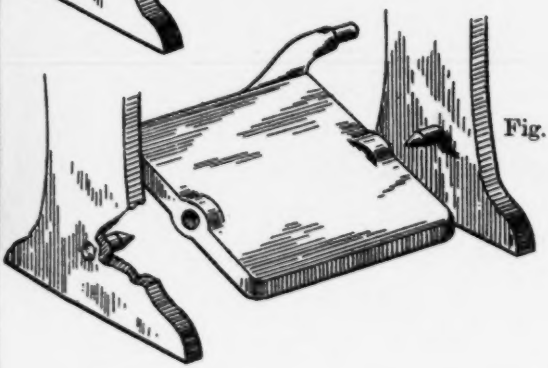


Fig. 6.

avoid infringement, but the law is too just to tolerate such practice.

In order to more clearly illustrate the precise matter in hand, consider for a moment the two columns of figures on the annexed insert. The first figure in the left-hand column represents a treadle with a trunnion cast on each side made in the form of a round journal, that is to say, a technical trunnion. In the two side pieces, round holes are bored, and when the trunnions of the treadle are inserted into these holes the treadle will oscillate up and down. This figure illustrates the form of bearing known as common journal bearings, sometimes as pin bearings. It was old in the art at the time of Cramer's invention, and he might have adopted it if he had seen fit.

It is clear, beyond all dispute, that if such a construction were used, it would be an infringement of Cramer's claim.

The second figure in said column represents the trunnions of the treadle formed into knife-edges, and the holes made V-shaped. When these knife-edges are inserted into the holes, the treadle will oscillate up and down just as before, and presents the case of a treadle mounted on knife-edge bearings. This

form of bearing was old at the time of Cramer's invention, and was the mechanical equivalent of the journal bearings.

The third figure represents a treadle with trunnions having pointed ends adapted to fit in the conical holes shown. When so fitted, the treadle will oscillate up and down just as before, and we then have an instance of point-center bearings. These, likewise, were old at the date of Cramer's invention, and were a mechanical equivalent for the other two forms.

There can be no question that such a construction as that shown in the third figure would be a plain and palpable infringement of Cramer's claim, because it would be nothing more than the substitution of point-center bearings in place of knife-edge bearings.

Advancing a step further in the argument, consider now the three cuts shown in the second column of the inset. The first one of these is the same as figure 1 of our first set of cuts, except that the trunnions have been cut off from the treadle and inserted from the outside, through the holes in the side piece, and a round hole has been bored in the treadle where the journal was formerly located. Insert these trunnions into the treadle holes, and the treadle will

oscillate as before. There has been merely a reversal of parts.

In figures 5 and 6 the same thing has been done, and yet all of those devices will operate in precisely the same way as before. Who is there will deny that the corresponding figures of these two sets of drawings are the mechanical equivalents of each other? If figure 6 in the second set, which is the construction of the Diehl machine, is the mechanical equivalent of figure 3 of the first set, then it is clearly the mechanical equivalent of figure 2 of the first set, which is Cramer's construction. Things equal to the same thing are equal to each other, is a mathematical axiom, and it was applied by this court to the law of patents in the case of *Machine Co.* vs. *Murphy* (97 U. S., 120).

We submit that the only mechanical difference between Cramer and Diehl is a mere reversal of two parts of the combination, without any change in result or mode of operation. It is well settled by the law that a mere reversal of parts, or change of location of elements, without producing any new result, does not avoid infringement.

In the leading case of *Machine Co.* vs. *Murphy* (97 U. S., 120), one device consisted of a moving

knife and a stationary table, while the other device consisted of a stationary knife and a moving table. They were held to be mechanical equivalents, notwithstanding such reversal of parts; and in rendering the opinion of this court, Mr. Justice Clifford used the following emphatic language:

"Except where form is of the essence of the invention, it has but little weight in the decision of such an issue, the correct rule being that in determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements in the light of what they do or what office or function they perform and how they perform it, and to find that one thing is substantially the same as another if it performs substantially the same function in substantially the same way to obtain the same result, always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce a substantially different result. Nor is it safe to give much heed to the fact that the corresponding device in the two machines organized to accomplish the same result is different in shape or form, the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the device works, and at the result as well as at the means by which the result is attained. * * *

"Authorities concur that the substantial equivalent "of a thing, in the sense of the patent law, is the "same as the thing itself; so that if the two devices "do the same work in substantially the same way, "and accomplish substantially the same result, they "are the same, even though they differ in name, "form, or shape."

This is the same rule of law that was applied by the court in *Winans* vs. *Denmead* (15 How., 330), and *Hoyt* vs. *Horne* (145 U. S., 308). In the latter case, a certain device called a "mid-feather" was represented as being in a horizontal position, and the infringer had changed it to a vertical one. This court said, through Mr. Justice Brown:

"The substitution of a vertical for a horizontal "mid-feather at the inoperative end of the tub is "merely the use of an old and well known mechan- "ical equivalent, and obviously intended to evade "the wording of the Hoyt patent."

Paraphrasing the language quoted, we might very properly say the substitution of a point-center bearing for the knife-edge kind is merely the use of an old and well known mechanical equivalent, and "ob- "viously intended to evade the wording of the "claim" of the Cramer patent.

In *Ives* vs. *Hamilton* (92 U. S., 426), we find an-

other instance of reversal of parts. The claim read as follows:

"Giving to the saw in its downward movement a "rocking or rolling motion by means of the com- "bination of the cross-head working in the *curved* "guides at the upper end of the saw, the lower end "of which is attached to a cross-head working in "straight guides and pivoted to the pitman below "the saw, with the crank-pin, substantially as de- "scribed."

The defendant's machine did not show *curved* guides, but two straight lines, representing two consecutive chords of the curve in the patentee's guide. It also connected the lower end of the saw to the pitman *below* the cross-head, instead of *above* it. These two changes were analogous to the two changes made by Diehl, viz: substitution of point-center for knife-edge bearings, and a reversal in the position of the bearing points.

Mr. Justice Bradley said:

"The substitution of guides at the top, made "crooked by a broken line, instead of a curved line, "is too transparent an imitation to need a moment's "consideration. * * * The attaching of the lower "end of the saw to the pitman below the cross-head "instead of above it, and thereby getting the same "movement as before by reversing the motion of the

"crank, is no change in principle. This is too obvi-
"ous for discussion. The combination of the two
"things in defendant's mill * * * is a close
"copy of the plaintiff's invention, quite as close as
"is usually made by those who attempt to evade a
"patent whilst they seek to use the substance of the
"invention."

Were we permitted to paraphrase this language and apply it to the case at bar, we would say: The substitution of point-center for knife-edge bearings is too transparent an imitation to need a moment's consideration. The placing of the trunnion in the brace and the bearing point in the treadle, instead of placing the trunnion in the treadle and the bearing point in the brace, and thereby getting the same movement as before by reversing the location of these parts, is no change in principle. This is too obvious for discussion. The combination of the two things in the defendant's machine is a close copy of the plaintiff's invention, quite as close as is usually made by those who attempt to evade a patent whilst they seek to use the substance of the invention.

Another instance of reversal of parts is *Valve Co.* vs. *Crosby* (113 U. S., 158).

There can be no question that the only difference between the Cramer and Diehl constructions is the

change from knife-edge to point-center bearings and a reversal of position of the bearing points; but both treadles are mounted in the brace; both accomplish the same result of keeping the bearings at a fixed distance apart; both do this by the same movement or mode of operation; and both make use of the same fundamental idea.

Instances of reversal of parts are quite numerous in the lower courts. Thus, in *Develin* vs. *Paynter* (64 Fed. Rep., 398), the device involved was a union of steam pipes, consisting of a head member having a seat of soft metal with a concave face, and a tail member having a convex face. The infringer had reversed these parts by putting the convex face on the head member and the concave face on the tail member, and the soft metal seat on the convex face instead of on the concave face. This was held to be a mere reversal of parts, and did not avoid the charge of infringement. In rendering the opinion of the court, Judge Acheson said:

"The differences between the union shown by the "patent in suit and the appellant's union are these: "In the latter the convex face is on the head mem- "ber, and the concave face is on the tail member, re- "versing the arrangement of the patent; and in the "appellant's union the convex face is composed of

"soft metal, whereas in the union described in the "patent it is the concave face which is of soft metal. "The appellants have transposed the position of the "soft metal face. Do they escape infringement by "the transposition of parts? We think not."

In the case of *Societe, etc.*, vs. *Rehfuss*, 75 Fed. Rep., 658, the invention consisted of the combination of a stationary tool holder and a movable chuck. The defendant had used a movable tool holder and a stationary chuck. In other words, he had merely reversed the position of the parts. The court said:

"The defendants have simply reversed the order "of the patent, without any change in the principle "of operation or in the result; but in the eye of the "patent law these two forms are substantially the "same thing, and a claim for one includes the other "as its manifest equivalent."

In *Harmon* vs. *Struthers* (57 Fed., 443), we find another instance of reversal of parts, and Judge Acheson found no hesitation in adjudging infringement.

The same patent was involved in a subsequent case between the same parties in 57 Fed. Rep., 638, wherein one of the expert witnesses said:

"The only change the defendant has made is a "mere change in location of the slot. But this is a

" change merely in position. It does not change the " result or the principle of the operation."

Concerning this testimony, Judge Acheson said: " These views, we think, are correct."

In *McEvilla* vs. *Hall* (43 Fed. Rep., 139), the only difference between the patented and infringing devices was the location of certain parts. Judge Nelson held this to be immaterial.

In *Adams* vs. *Manufacturing Co.* (3 B. & A., 1) and *Reece Buttonhole Machine Co.* vs. *Globe Buttonhole Machine Co.* (61 Fed. Rep., 958), we find additional instances of mere reversal of parts. The latter case involved a sewing machine patent wherein there was a moving stitching mechanism and stationary plate, whereas the defendant used a stationary stitching mechanism and moving plate. This reversal of parts was held, on the authority of *Winans* vs. *Denmead,* to be immaterial, and infringement was adjudged. If that case is good law, it disposes of the case at bar, because the analogy is too apparent to admit of question.

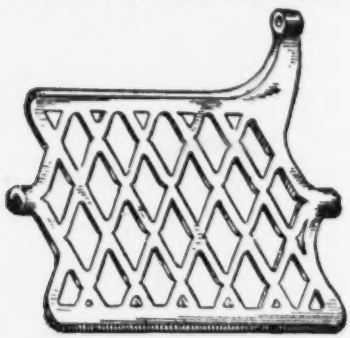
But there is another aspect in which this matter may be viewed; of a technical nature, it is true, but still a sound one; and as our learned adversaries rely

strongly on technicalities, we feel justified in presenting this matter to the court.

It is claimed by them that their treadle has no trunnions. Permit us to examine this contention analytically.

The following cut, taken from plaintiff's Exhibit P, and from the cuts in the Singer catalogue, represents the infringing treadle.

Diehl's Treadle with Screw Bolts Removed.



Is this a treadle provided with trunnions? Undoubtedly it has lugs or projections on each side, after the analagy of the trunnions of a cannon. They differ in form from Cramer's in that they are not knife-edged; but that is immaterial in view of Cramer's disclaimer as to knife-edge bearings and of the further fact that knife-edge bearings are the equivalents of point-center bearings.

It may possibly be urged that these projections are not trunnions because they do not rest in boxes and oscillate therein, as in the case of a cannon. We have seen, however, according to Knight's Mechanical Dictionary, that the essential attributes of trunnions are that they shall form " supports for the piece " and an axis on which it turns during elevation and " depression."

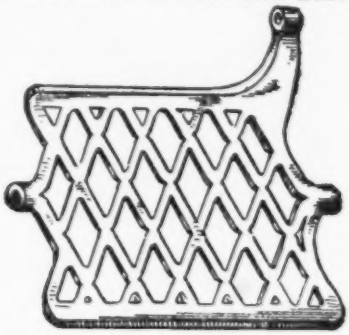
Those are the two attributes of trunnions, and determine whether or not a device, by whatever name called, is a trunnion. Both of these attributes are found in the Singer treadle. Beyond all question the two projections in said treadle constitute supports for the piece; that is to say, supports for the treadle, because the points of the screws enter the conical cavities in the ends of the trunnions, and the treadle hangs thereon, *i. e.*, is supported thereby.

As to the second attribute of a trunnion, viz., forming an axis on which the piece turns, it is apparent that the Singer treadle meets this requirement as truly as the Cramer treadle does. Technically an axis is the imaginary line about which a rotating body turns, as for instance, the axis of the earth. In this sense there is as much of " an axis on which it turns " during elevation and depression " in the Singer case

as in the Cramer case. Therefore, according to the strict letter of the claim the Singer treadle is provided with trunions, or the equivalents thereof.

But in order to place this matter beyond the pale of doubt we again resort to diagrams. The first one is a reproduction of the Singer treadle.

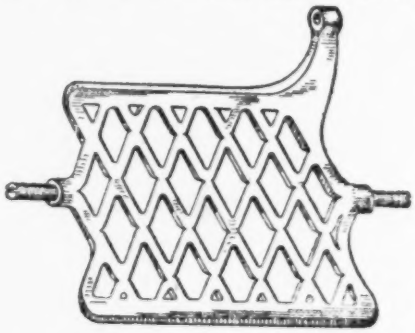
Diehl's Treadle with Screw Bolts Removed.



We have already endeavored to show that the projections on the sides of this treadle are trunnions, or at least the equivalents of trunnions, because they possess the two essential attributes of trunnions, viz., forming supports for the treadle and an axis on which the treadle turns during elevation and depression. If, however, we be wrong in this, there can be no question that when the point center screw bolts are applied in place, and the treadle is mounted, then the treadle is "provided with trunnions."

To mount this treadle the screw bolts are passed through the holes in the lower ends of the vertical brace, and their pointed ends are extended into the conical sockets in the sides of the treadle, as represented by the following diagram:

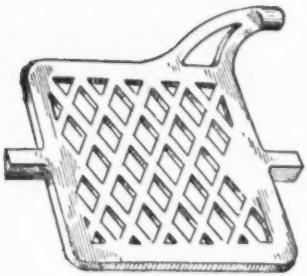
Diehl's Treadle With Screw Bolts in Place.



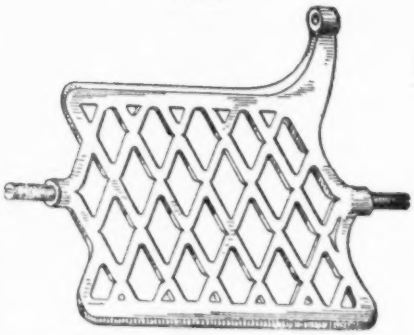
Is not this a "treadle provided with trunnions"? If we are to be guided by the definition from Knight's Mechanical Dictionary, it certainly is, because the bolts support the treadle and constitute an axis on which it turns during elevation and depression.

But barring technicalities and verbal refinements, and viewing the matter in the light of ordinary common sense, is not the above construction the substantial equivalent of Cramer's? Place the two constructions side by side as illustrated in the following diagrams:

Cramer



Diehl.



The only difference that can possibly be suggested is that in Cramer's case the trunnion is cast in one piece with the treadle, and the bearing point is at the outer end of the trunnion in the brace, whereas in Diehl's case the trunnion is cast in a separate piece from the treadle, and the bearing point is at the inner end of the trunnion in the treadle. But we have already shown by many decisions that the mere reversal in position of the bearing points is immaterial in the eyes of the patent law. We shall now show that where a patent calls for a structure consisting of two parts cast in one piece, infringement is not avoided by casting the two parts in separate pieces and subsequently uniting them together to act in combination.

In *Wheeler* vs. *Clipper Mower and Reaper Com-*

pany, 10 Blatch., 193, S. C. 6, Fisher 1, the essential feature of the invention was a hinged metal bar. Its function was two-fold, while in the defendant's machine two separate devices were used to accomplish those two purposes. It was merely a case of dividing the patented device into two parts, which two parts, when combined, effected the same result as the patented device, and Judge Woodruff so ruled, saying:

"A patent for a device cannot be avoided by di-
"viding it into two parts, which, when combined,
"produce the same result in substantially the same
"way."

In *Strobridge* vs. *Lindsay,* 6 Fed. Rep., 510, we find a stronger case. The invention was a coffee mill, and the claim was a "detachable hopper and grind-
"ing shell formed in a single piece," etc. On final hearing the defendants had been enjoined. (2 Fed. Rep., 692.) Thereafter they changed the form of their mill by casting the hopper and shell in two pieces and then bolting them together. It was insisted by them that such construction was no infringement, "in that it does not have a detachable hopper
"and grinding shell formed in a single piece, but on
"the contrary, that the hopper and grinding shell
"thereof are separate constructions."

This argument found no favor with Judge Acheson, who disposed of it by saying:

"Manifestly the sole object is to produce a mill of "which it can be affirmed that the hopper and grind- "ing shell are not cast integral or formed in a single "piece literally. But 'the letter killeth'; and if the "justice of the case is not to be sacrificed, regard must "be had to the spirit rather than the phraseology of "Strobridge's first claim. Surely the plaintiff's suc- "cess was a barren victory if by such an alteration "as the one here adopted the injunction of this court "can be evaded."

"But the expedient must fail of its purpose. The "change is but colorable. Although cast in two "pieces, yet when put together for use the hopper "and the grinding shell are substantially and for all "practical purposes formed in a single piece. If au- "thority is needed for the proposition that a patent "cannot be defeated by dividing the patented de- "vice into two parts, which when combined produce "the same result in substantially the same way, it "will be found in *Wheeler* vs. *Clipper Mower and* "*Reaper Company,* 6 Fisher, 2."

The same point was ruled in *Roots* vs. *Hyndman,* 6 Fisher, 440, where the device consisted of a rotary blower case cast in a single piece. The defendant had made his blower case in two pieces and then joined them together. Judge Emmons said of such a construction:

"A machine in all respects like the complainant's "with the exception of a useless division of the short- "ened arcs by casting them in two pieces, would be "an infringement without any doubt whatever.

The case was appealed to the Supreme Court, and there affirmed. Mr. Justice Swayne, in delivering the opinion of the court, was most emphatic in his condemnation of the infringer and used the following vigorous language:

"The appellees (patentees) * * * confine "their claims to improvements in the shell or case "of blowers. * * * They say the objects of "their invention were to avoid the necessity of bor- "ing out the interior concave surfaces of the case, "and of facing off or planing the head-plates, and "to render it practicable to *cast the outside casing in "one piece.* * * * The appellant's (infringer's) "case is *cast in two parts.* * * * Why is this? "And what are his object and purpose? We can "imagine none but to gather where another had "sown, and escape by simulation and subterfuge the "consequences which the act of Congress has pre- "scribed for the unlawful appropriation of such "property. * * * The proofs leave no doubt "in our minds that the appellant is guilty of the in- "fringement of this claim."

Hyndman vs. *Roots*, 97 U. S., 224.

The latest case we can find is that of *Westinghouse*

vs. *New York Air-Brake Co.*, 59 Fed. Rep., 581, decided in November, 1893, by the circuit court for the southern district of New York. There the same question was decided. Without going into details, it will suffice to quote a few sentences from page 596:

"The question is whether this combination of devices is the same as the device of the complainants. "It seems to me that it is. The component parts of "the combination operate together to perform the "same function and to produce the same result. It is "merely dividing complainant's piston into two "parts, so arranged that the action of one necessarily "causes the action of the other in the same way as "though they were one."

The learned judge then goes on to quote authorities as follows:

"A patent for a device cannot be avoided *by dividing it into two parts, which, when combined, produce the same result in substantially the same way.* * * * With reference to the object in view—the raising and the lowering of the fingers, which is the usual purpose contemplated—the effect is identical. The means * * * are substantially the same, and they operate * * * in substance, in the same manner. To hold otherwise would be to give immaterial variations capacity practically to destroy the value of any patent whatever. Judge Woodruff in *Wheeler* vs. *Reaper Co.*, 10 Blachf., 181. In the case of *Strobridge* vs. *Lind-*

" *say,* 6 Fed., 510, a case somewhat similar to the one " at bar was presented. The complainant was the " owner of a patent for a coffee mill. The claim in " suit was for 'a detachable hopper and grinding " 'shell, formed in a single piece,' etc. The defend- " ants, having been enjoined, made a new mill in " which the hopper and grinding-shell were cast sep- " arately. Judge Acheson held that this did not " avoid infringement, and said:

" 'The change is but colorable. Although cast in " 'two pieces, yet when put together for use, the hop- " 'per and grinding-shell are substantially, and for all " 'practical purposes, "formed in a single piece." '

" The same view was held by the supreme court of " the United States in *Robertson* vs. *Blake,* 94 U. S., 728."

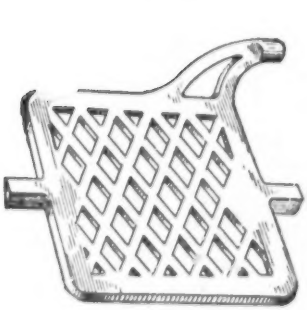
This decision was affirmed by the court of appeals of the second circuit (*Westinghouse Air-Brake Co.* vs. *N. Y. Air-Brake Co.,* 63 Fed. Rep., 926), and was followed by Judge Lacombe on motion for preliminary injunction in a suit between the same parties, reported in 65 Fed. Rep., 99.

The rule of law enunciated in the foregoing citations seems applicable to the matter in hand. The Cramer patent shows the treadle and trunnions cast in a single piece and the claim is for " a treadle pro- " vided with trunnions." The defendant has severed the trunnions from the treadle, so that they constitute

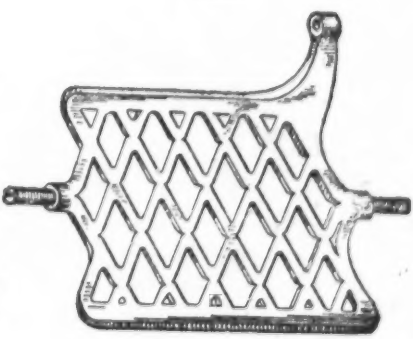
two pieces, instead of one integral structure; but when the machine is set up for operation, these severed parts are united together to work in combination for the production of the same result as before. In other words, the Cramer device, consisting of a treadle and trunnions cast in a single piece, "cannot "be avoided by dividing it into two parts, which "when combined produce the same result in sub-"stantially the same way."

Consider again for a moment diagrams of the two devices:

Cramer



Diehl.



It is too palpable to admit of argument that Diehl has simply cut off the Cramer trunnions from the treadle, and by a slightly different arrangement of the bearing points, which is not material, has re-

united those severed parts together and caused them to work in combination to produce the same old result. It may be true that when a Diehl treadle is taken out of the machine and viewed alone and by itself, it has no trunnions, because they have been cut off; but it is equally true that when the Diehl treadle is fixed in place in the machine, it is provided with devices which perform all the functions of trunnions; that is to say, (1) they act as supports for the treadle, and (2) they constitute an axis on which the treadle turns during elevation and depression. The matter comes squarely within the rule announced by this court in *Machine Co.* vs. *Murphy*, 97 U. S., 120, where it is said:

"Nor is it safe to give much heed to the fact that "the corresponding device in the two machines or- "ganized to accomplish the same result is different "in shape or form, the one from the other, as it is "necessary in every such investigation to look at the "mode of operation or the way the device works, "and at the result, as well as at the means by which "the result is attained. Authorities concur that the "substantial equivalent of a thing, in the sense of the "patent law, is the same as the thing itself, so that "if the two devices do the same work in substantially "the same way, and accomplish substantially the "same result, they are the same, even though they "differ in name, form or shape."

FURTHER EVIDENCE OF INFRINGEMENT.

There is one bit of evidence in the record which to our mind is conclusive of the question of infringement. It is particularly valuable in that the Singer Company produced it, and that is the matter of the Bent machine.

In the answer of the defendant it is set up as a defense that the Cramer patent was anticipated by George P. Bent and others at the city of Chicago. (Rec., 18.)

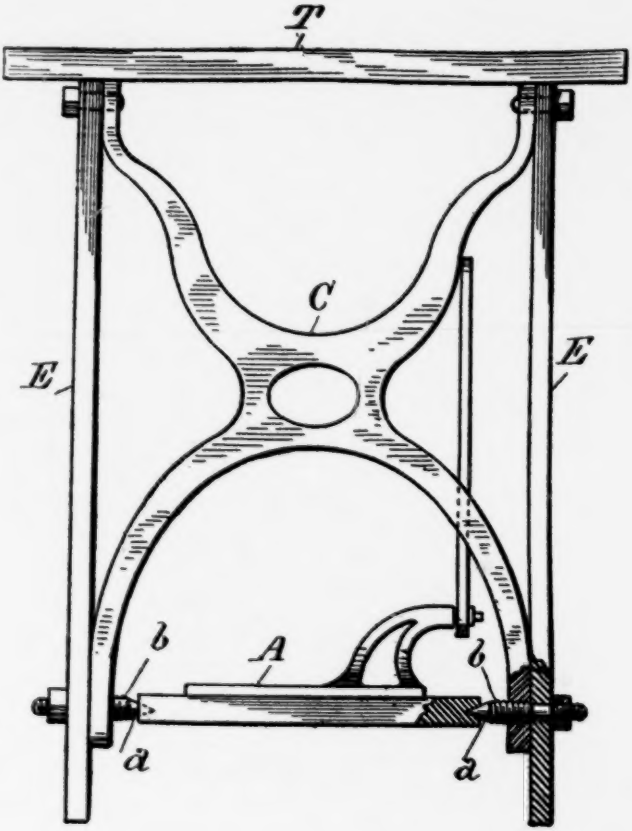
In order to sustain this defense defendant took the depositions of George P. Bent (Rec., 229), Susan Dilworth (Rec., 236), William H. Matchett (Rec., 238), Walter Skates (Rec., 246), William Walmsley (Rec., 252) and John Elliott (Rec., 254.)

These witnesses testified to the manufacture and use of a sewing machine in Chicago. Bent said on direct examination that "such use was in the winter "of 1880-1"; that is to say, in December of 1880 and January and February of 1881. On cross-examination he said: "Now as to whether these patents "were complete in December, 1880, January, Feb- "ruary, March or April, 1881, I cannot positively "swear, but I began to advertise machines with "stands made from these original patterns during the

"year 1881." (Rec., 235.) And he produced a catalogue issued by himself in 1882, showing the construction in question, which seems to be the first publication of the same, according to his own testimony. (Rec., 231.) He made no actual sales of the machine until 1881.

The other witnesses testified that as near as they could tell the Bent machine was first made and sold in 1881, and the sales continued during the year 1882. It is reasonably certain, therefore, we take it, that these Bent machines were not placed on the market until 1881.

The cut on adjoining page is a reproduction of a drawing put in evidence by the defendants, showing the construction of the Bent device. It shows a treadle with countersunk conical holes in the sides thereof, and point center screws passed through the lower ends of the vertical brace, with their points resting in the conical holes of the treadle. This is the same construction as that of Diehl, shown in the Diehl patent and embodied in the infringing machine. There can be no question that if this Bent device were early enough in time, it would anticipate the broad feature of the Cramer claim for which we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have been contending; but it was *not* early enough in time. The Cramer invention was made in June, 1880, practically about one year before the Bent machines were put on the market. Therefore, Bent's machine does not anticipate Cramer's in time, but is subsequent thereto. It is well settled that a device which would anticipate, if prior, will infringe, if subsequent to the patented invention. This rule is so elementary that our learned adversaries will not deny it. Now the Bent device, being subsequent in time to the Cramer invention, would be an infringement if made and sold after the date of the Cramer patent, and as the Diehl device is the same as that of Bent, it must follow that the Diehl device is an infringement, and this, too, according to the views advanced by our learned adversaries. Was not this some evidence of infringement, and as such, was it not proper to go to the jury? The defendant stood convicted out of its own mouth, and yet it is now seriously urged by the defendant that there was *no evidence whatever* of infringement in the case. It is not often that a defendant furnishes weapons for his own destruction, but in this case we cannot escape the conclusion that the defendant has committed suicide.

Perhaps we have already said enough on this sub-

ject to show that there was *some* evidence of infringement in the case, sufficient to go to the jury, and anything further may appear unnecessary; but we cannot forbear adding a word to show that the "idea of means" embodied in the Diehl patent is in substance the same "idea of means" embodied in Cramer's. For this purpose we place in parallel columns extracts from the two specifications:

EXTRACTS FROM CRAMERS' SPECIFICATION.	EXTRACTS FROM DIEHL'S SPECIFICATION.
1. I, Herman Cramer, of Sonora, in the county of Tuolumne, and State of California, have invented a new and improved sewing machine treadle.	1. I, Philip Diehl, of the city of Elizabeth, in the county of Union, and State of New Jersey, have made an invention of certain new and useful improvements in sewing machine stands and treadles.
2. My invention relates to improvements in the bearings of sewing machine treadles.	2. My invention relates to an improved sewing machine stand.
3. And it has for its object to provide means, first, to keep the treadle bearings rigidly in line at a fixed distance apart to avoid friction; and, second, to make its movements noiseless.	3. Its object is to secure a permanent and reliable support and adjustment for both the band-wheel and treadle and to preserve their respective relative positions so that they will always co-operate to produce the best results with the least danger of friction or binding.

4. Fig. 1 is a perspective view of a portion of a sewing machine showing my invention. Fig. 2 is a transverse section of the treadle. A represents the treadle provided with the usual pitman connection by which to run the sewing machine wheel. B represents the two trunnions cast as a portion of the treadle and extending from its sides into loopholes in the common cast-iron cross-brace C. These trunnions are sharpened to an edge or corner along their lower side, and the lower end of the loophole is hollowed to an angle more obtuse than the edge of trunnion to serve as a bearing for the same and permit the rocking motion common to treadles.

4. In the drawings, Fig. 1 is a face view of such a stand, and Fig. 2 an edge view of the brace within which I support both the band-wheel crank and treadle. C is the ordinary table top of the sewing machine; B the upright legs or stand-sides; A the usual brace connecting the same and serving to stiffen and secure the frame, as well as to perform the specific and additional function hereinafter explained.

5. C represents the usual cast-iron double brace connecting the two end legs diagonally in a plane generally vertical. The lower ends of this brace are secured directly to the web of the leg by the bolts d, and for convenience and strength I make the two ends of

5. This brace is formed, substantially as shown, with a loop within which the band-wheel can act, and on the sides of which are provided conical bearings for the shaft which supports the band wheel, and which is preferably bent so as to form a crank. To this

the common cross-bar D, serve as these bolts; the upper ends of the brace are secured, as usual, either to the web of the legs or to the table, near the legs. The treadle and its trunnion bearings are wholly independent of the cross-bar D, except its service, as stated, to hold the brace to the legs. The bearing holes in the brace are formed into long vertical loops.

6. Below the bearings of the trunnions, B, I provide cups, M, attached to the ends of brace, C, to catch the oil that usually drips from such bearings. By this construction my treadle bearings are rigidly fixed, and in no way liable to get out of line or to require adjustment. The usual noise is prevented, and overflowing oil is caught before it can do damage.

I am aware that sewing machine treadles have before been provid-

crank is attached an ordinary pitman, which, at its lower end, is pivotally connected to an ordinary rocking treadle. This treadle is supported in the lower portion of said brace, which I prefer to make as shown, forming practically another loop, the lower end of which is the cross-bar on which the treadle is hung. This cross-bar may, however, be omitted and the treadle hung directly on downward projections from the brace.

6. My invention is shown as applied to a stand adapted for use in supporting and driving a Singer I. S. sewing machine; but I do not confine myself to any particular form of stand, the essential part of my invention being the providing of supports for both the band-wheel and the treadle, which are integral with the brace, so that when said band-wheel, with its driving crank, and said treadle have been hung within said brace and connected by a

ed with V-shaped bearings, and I do not claim the same as my invention.

suitable pitman, their adjustment to and relationship with each other are practically permanently secured.

Means are provided for taking up ordinary wear in the band-wheel shaft by the cone-bearings *a a* and the screw *b*, and in the treadle by the conical-pointed screws *d* acting in suitable bearing recesses. By this arrangement any twisting or other alteration in the fitting or connections between the brace and the legs, or between any of the several parts of the sewing machine stand, will neither affect the hanging, adjustment, or relationship of the sand band wheel and treadle, and, in fact, the lower driving apparatus of the sewing machine is, by my invention, absolutely secured against any accident short of the breaking or forcible distortion of the brace itself. This brace, being built strongly and preferably with a a rib, as shown, is not at all likely to be injured in ordinary use or by ordinary handling.

There is no doubt that Diehl's patent shows the new idea of hanging a band wheel in the vertical brace. This band wheel had formerly been hung in the legs or sides. Diehl thought it was a good idea to hang it in the brace, just as Cramer, years before, had thought it a good idea to hang the treadle in the brace. Consequently, Diehl added to the Cramer idea of hanging the treadle in the brace, the additional idea of hanging the band wheel in the brace, thereby producing a stand in which both the band wheel and treadle are hung in the brace. With these facts in mind, permit us to compare Cramer's and Diehl's ideas as to the brace and treadle, shown by the extracts above quoted from their respective patents.

In Extract 1, Cramer says he has invented "a "sewing machine treadle"; Diehl says "sewing "machine stand and treadle."

In Extract 2, Cramer says his invention relates to "improvements in the bearings of sewing machine "treadles." This does not mean the V-shaped bearings, for those he disclaimed, but must refer to everything necessarily connected with the adjustment of the treadle to the brace. Diehl says that his relates to "an improved construction of sewing ma-

" chine stand." This, if taken literally, would cover the entire stand, from the top board to the floor. It, therefore, is nothing more than one of those glittering generalities frequently indulged in by infringers.

In Extract 3, Cramer says his object is to " keep " the treadle bearings rigidly in line and at a fixed " distance apart to avoid friction." Diehl says his object is to secure a " support for both band wheel " and treadle, and to preserve their respective rela- " tive positions so that they will always co-operate " to produce the best results with the least danger of " friction and binding."

In Extract 4, Cramer points out in his specification the " treadle A, the trunnions B extending into " brace C." He describes the construction of the V-shaped bearing and its seat. Diehl points out " the " brace within which I support both the band wheel " crank and treadle," his table top C, the legs B and " the usual brace connecting the same (legs) " and serving to stiffen and secure the frame as well " as to perform the specific and additional function " hereinafter explained." This function is to support the band wheel and treadle.

In Extract 5, Cramer points out " the usual cast- " iron double brace," describes its connection with

the legs, and says " the treadle and trunnion bearings " are wholly independent of the cross bar E, except " its service as stated to hold the brace in the legs." And also, " the bearing holes in the brace are formed " into long vertical loops." Diehl describes his brace, and then proceeds: " This treadle is supported in " the lower portion of said brace, which I prefer to " make as shown, forming practically another loop, " the lower end of which is the cross bar on which " the treadle is hung." His next sentence is as follows: " This cross bar may, however, be omitted " and the treadle hung directly on downward projec- " tions from the brace." This last sentence clearly establishes what Diehl's idea was. It shows that his idea was not treadle and cross bar, as counsel claims, but treadle and brace; for he says, " this cross bar " may, however, be omitted," leaving " the treadle " hung directly on the downward projections of the " brace." Here he repudiated the cross-bar idea. He says the cross bar is not necessary. He here reveals the idea he has in his own mind of his own invention, his " idea of means " to be employed to produce his result. He virtually says, " Take a hammer and " break out the cross bar under my treadle and my " invention remains intact."

In Extract 6, Cramer says, " By this construction " my treadle bearings are rigidly fixed and in no way " liable to get out of line or to require adjustment," and he then explicitly disclaims the V-shaped bearing. Diehl says " the essential part of my invention " being the providing of support for both the band " wheel and treadle, which are integral with the " brace." Clearly if the supports for the band wheel and treadle be integral with the brace, then the treadle must rest in or on the brace in this integral support.

Diehl then continues, " So that when said band " wheel and its driving crank and its said treadle " have been hung within said brace and connected by " suitable pitman, their adjustment to and relation- " ship with each other are practically secured." Notice that this assurance of relationship and adjustment is to be an accomplished fact, "when the said " band wheel and its driving crank and treadle have " been hung within the brace and connected by pit- " man."

Diehl then proceeds: " Means are provided for " taking up the wear in the band wheel shaft by the " cone-bearings *aa* and the screw *b*, and in the treadle " by the conical pointed screws *d* acting in suitable

"bearing recesses." This is his first mention of the point-center bearings for the treadle, the equivalent of Cramer's knife-edge bearings. This part of the specification is dextrously drawn to throw these point-centers as far as possible in the background. It is not stated that they are to serve as bearings for the treadle connecting it to the brace. They are merely means "provided for taking up ordinary "wear." When he speaks of the band wheel supports in the brace, he says that on the sides of the brace "are provided conical bearings for the shaft "which supports the band wheel." Nowhere in the specification does he refer directly to any means of supporting the treadle. If the question were asked how he intended to support his treadle, his answer would be to look at the drawings where the support is clearly shown. That support consists of point-center bearings, but the skilled attorneys who drafted the specification were evidently aware of the old proverb, "Least said soonest mended."

Diehl's specification then proceeds as follows: "By this arrangement any twisting or other altera- "tions in the fittings or connections between the brace "and the legs or between any of the several parts of "a sewing machine stand will neither affect the

"hanging, adjustment, or relationship of the said "band wheel and treadle, and in fact the lower driv- "ing apparatus of the sewing machine is by my in- "vention absolutely secured against any accident "short of the breaking or forcible distortion of the "brace itself."

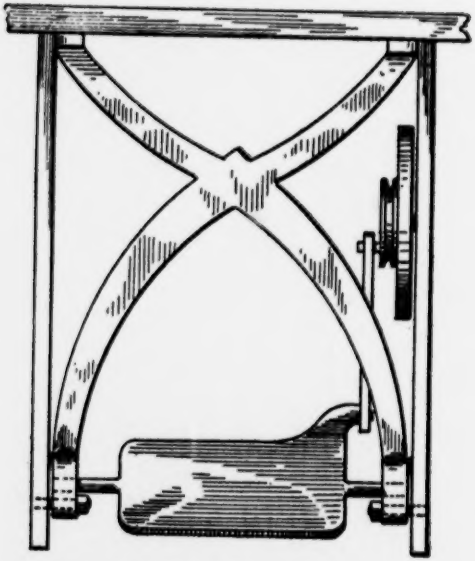
Why will not this twisting between the legs and the brace or other alteration in the fittings or connections between them affect the hanging, adjusting or relationship of the said band wheel and treadle? Simply because they are both hung in the brace and are independent of the legs or other parts of the machine. This is obvious.

Diehl further says, "the lower driving apparatus "of the sewing machine is by my invention absolutely "secured against any accident short of breakage or "forcible distortion of the brace itself." That is to say—"Break out the bar under my treadle, break "part of my legs, but leave the vertical brace alone "and my treadle and wheel will remain intact; my "invention has not been disturbed until the brace "itself has been broken or distorted so as to jam the "wheel and treadle."

In the specifications of both Cramer and Diehl it is stated that the lower cross-bar is not material,

since it is used merely as a strengthening bar or bolt. In each case this cross-bar may be omittetd. To illustrate the idea clearly, we have reproduced on the adjoining page cuts of the two stands with the cross-bar in each case removed, leaving the treadle mounted directly in the vertical brace, and we have added below each figure the statement taken from each specification as to the right to remove this cross-bar. The two cuts show clearly the essential idea of means in each case. They are one and the same, to wit: the mounting of the treadle directly in the vertical brace. Cramer mounts his by means of knife-edge bearings, simply because he considered that form of bearing best. He disclaimed it as being any part of his invention, and is, therefore, entitled to use any form of bearing in that connection. Diehl mounts his treadle in the vertical brace, but by means of point center bearings, because he considered that to be the best form of bearing to use. The evidence is uncontradicted to the effect that at the time of the Cramer invention knife-edge bearings and point-center bearings were equivalent. Consequently, Diehl has appropriated the Cramer idea of means, and the only variation he has made is to substitute one equivalent for another.

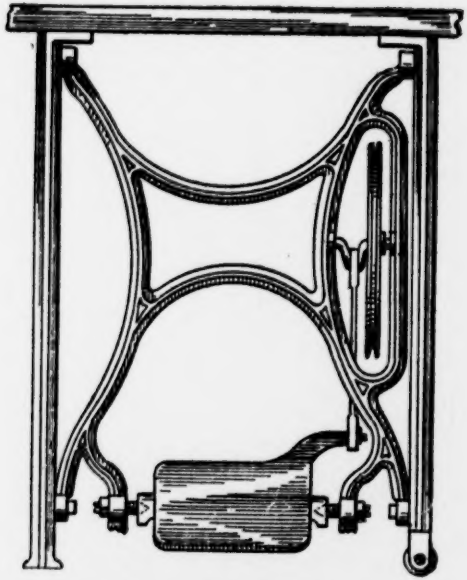
Cramer's Cross Bar Removed.



Extract from Cramer's specification:

"The treadle and its trunnion-bearings are wholly independent of the cross-bar D, except its service, as stated, to hold the brace to the legs."

Diehl's Cross Bar Removed.



Extract from Diehl's specification:

"This cross-bar may, however, be omitted and the treadle hung directly on downward projections from the brace."

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In this connection and as additional evidence on the point at issue we refer to the statement in the Singer catalogues which were put in evidence. One of them says of the Diehl construction:

"The band wheel and treadle have their bearings "entirely independent of the stand (or legs), thereby "assuring a correct adjustment and easy motion. "This device prevents the 'building' which so often "follows a misplacement of the supports of the ma- "chine, a difficulty rarely appreciated except by a "skilled mechanic, which hitherto it has been consid- "ered impossible to remedy. This distinctive fea- "ture of the Singer machine is of great importance "to the health and comfort of the operator," etc., etc.

At another portion of the same catalogue, it is said:

"Both the band-wheel and the treadle work upon "adjustable centers which admit of accurate adjust- "ment with a minimum amount of friction. This "distinctive feature renders ours the lightest running "of any sewing machine stand yet constructed and "is a matter of great importance to the health and "comfort of the operator."

In another circular, which was put in evidence, it is said of a cut of the Diehl stand:

"It also shows the new (patented) and light run- "ning stand upon which all our family machines are

" mounted, the band-wheel and treadle entirely sup-
" ported within the brace, insuring accurate adjust-
" ment and ease of operation."

In view of the foregoing comparisons of the two specifications in connection with the said circulars it would be a dull and stupid intellect, indeed, which could not detect that the "idea of means" contained in the Singer machine consisted, amongst other things, in mounting the treadle in the vertical brace, and if this is the "idea of means" embodied in the Cramer device, then the two are the same in that respect. In any event it was a proper question to be submitted to the jury, and *per force,* the court did not err in so submitting the same.

It will be observed that we have discussed this question of infringement upon its merits, as if it were an open question before a trial court, or as if this were an appeal in an equity case where the appellate court is entitled to try the case *de novo.* We have done this in order to show that the decision of the lower court was correct on the merits, but we again beg leave to say that this is not an appeal in an equity case, and therefore, the defendant is not entitled to a hearing *de novo.* This case comes up by writ of error, and it is only necessary for us to show

that there was *some* evidence of infringement. The burden was on the defendant to show that there was *no evidence whatever of infringement.* If, therefore, this court is not convinced by what we have said, it must certainly be convinced that the question of infringement was at least a debatable one and that the theory of no infringement was not so palpable and clear as to authorize the lower court to withdraw the case from the jury.

While the evidence on many points in our favor was undisputed, it was conflicting on other points, and the experts on the two sides gave opposite views as to the meaning of technical terms and the construction of the Cramer claim as rival experts always do. It cannot be denied that where there is conflicting evidence on any material point, the case must be submitted to the jury, and if the judge in this case had complied with the defendant's request and taken the case away from the jury, his act would have been an unwarrantable interference with the prerogative of the jury, and a deprivation of the plaintiff's right to a trial by jury guaranteed to him by the seventh amendment of the federal constitution.

In closing this part of the brief we reproduce that portion of the decision of the court of appeals bear-

ing on the point in controversy. We see no escape from its logic. It reads as follows:

"One of the assignments of error principally relied "on by the plaintiff in error is that the court refused "to give a peremptory instruction to the jury at the "close of the evidence to find for the defendant. "This instruction was asked upon the ground that "'no infringement had been shown.' Whether or "not it was error to refuse the instruction depends "upon whether there was any evidence whatever of "infringement, which if credited by the jury, would "have justified their verdict. It is contended on be- "half of the plaintiff in error that the claim of the "patent which is sued upon calls for a combination "of elements, all of which were old, and that the "court could plainly see from an inspection of the "Diehl patent that it omitted substantial features of "the patent upon which the action was brought. "We find in the record evidence which went to the "jury tending to show that the essential and impor- "tant feature of the Cramer patent was the location "of the treadle supports in the vertical cross-brace "which connected the legs or side pieces of the ma- "chine, and that such location in the cross-brace was "new with the Cramer invention. There was also "evidence tending to show that by so locating the "treadle a better alignment of the treadle could be "kept and maintained, and that the tendency of the "machine in operation to loosen the joints which "hold its legs in position, thereby displacing the "treadle, was overcome. The evidence was that "theretofore the treadle had been mounted in the

" legs or side pieces of the machine, or on a cross-rod " connecting the legs, but never before had been in- " serted in the vertical cross-brace. In addition to " other evidence of the utility of the plaintiff's inven- " tion, and of its novelty, was the evidence afforded " by the admissions and declarations of the plain- " tiff in error. It was shown that shortly after ob- " taining his patent on February 8, 1883, Cramer " submitted to that corporation the claims of his in- " vention and endeavored to sell it his patent. In the " following year Diehl, who was an employe of the " Singer Company, obtained his patent upon his de- " vice, which also places the bearings of the treadle " in the vertical cross-brace. The advantage of this " construction of treadles under the Diehl patent was " promptly published to the world by the Singer " Company. Its catalogue, 1885, exhibits cuts of " machines with the treadles hung in the vertical " cross-brace, and thus refers to them: 'The balance- " 'wheel and treadle have their bearings entirely in- " 'dependent of the stand (or legs), thereby assuring " 'a correct adjustment and easy action. This device " 'prevents the "building" which so often follows a " 'slight displacement of the supports of the ma- " 'chine, a difficulty rarely appreciated, except by a " 'skilled mechanic, which hitherto has been consid- " 'ered impossible to remedy.' In another circular " is shown a cut of a machine containing the treadle " mounted in a vertical brace, accompanied with " these words: ' It also shows the new (patented) " 'and light-running stand, upon which all our fam- " 'ily machines are mounted, with band-wheel and " 'treadle entirely supported within the brace, insur-

" 'ing accurate adjustment and ease of operation.' In " its catalogue of 1889 the company said: 'These " 'bearings being entirely within the brace, the ad- " 'justment is not affected by any strain which may " 'be put upon the stand.'

" But it is contended that inasmuch as the claim of " the Cramer patent is for a combination of elements, " all of which were old, the patent is not entitled to " the doctrine of equivalents, but must be confined " to the form which is presented in the claim and " specifications. It is urged that the Diehl patent " presents material variations from those forms, so " material as to avoid the charge of infringement. It " is said that the Diehl patent uses point-center bear- " ings instead of knife-edge bearings with trunnions, " which are essential features of the Cramer patent. " The trunnions in the Cramer patent are projections " upon the sides of the treadle in its axis, and their " purpose is to afford the knife-edge bearings upon " which the treadle turns. In the Diehl patent there " are no such projections, the treadle at the point of " axis turns upon point-center bearings, that is to say, " upon pointed screws which are inserted through " holes in the vertical cross-brace, and are set in holes " countersunk in the treadle. There was evidence " before the jury that these screws in the Diehl " patent, upon which the treadle turned, were the " mechanical equivalents of the knife-edged bear- " ings and trunnions of the Cramer patent, and that " by inserting the screws through the cross-brace in " the Diehl device, the same result was secured by a " reverse method that was secured in the Cramer de- " vice. If the evidence was true that Cramer was the

"first to present a new and useful combination by "mounting his treadle in the vertical cross-brace, "thereby obtaining the advantages which some of "the witnesses testified to, he was undoubtedly en- "titled to the protection of that combination and to "the exclusive right to mount a treadle in the cross- "brace, no matter what the form of the bearings of "the treadle might be. This view is fully sustained "by the general doctrine of the decisions. (*Winans* "vs. *Denmead,* 15 How., 330; *Ives* vs. *Hamilton,* 92 "U. S., 426; *Machine Co.* vs. *Murphy,* 97 U. S., "120; *Hoyt* vs. *Horne,* 145 U. S., 308.)

"It is earnestly contended that, inasmuch as the "claim of the Cramer patent calls for a 'treadle pro- "'vided with trunnions,' that the trunnions are made "an essential feature of the construction of the trea- "dle and that there can be no infringement by a trea- "dle which has no trunnions. We do not think, "however, that the court should have taken the case "from the jury upon that ground. In order to mount "the Cramer treadle in the vertical cross-brace upon "knife-edged bearings, it was absolutely necessary "that it be provided with trunnions or the equivalent "thereof.

"The trunnions in this case are the knife-edges of "the bearings, no more and no less. There could be "no such bearings without the projections, by what- "ever name they may be called. If the patentee was "entitled to the doctrine of mechanical equivalents "and to the protection of the right to mount his trea- "dle in the vertical cross-brace with bearings, "whether knife-edged or point-center, his right is "certainly not affected or diminished by the use of

" the words 'provided with trunnions,' as found in " his claim, provided that the jury found, as they " may have done from the evidence, that the one ele- " ment of his combination, which consisted in mount- " ing the treadle in the cross-brace, was new, and that " the bearings used in the Diehl patent were the " mechanical equivalents of his bearings."

II.

EXCEPTIONS AS TO THE ADMISSION AND REJECTION OF EVIDENCE EMBODIED IN ASSIGNMENTS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

These exceptions are scarcely worthy of serious consideration, but, as they are contained in the record, we say a few words on the subject:

EXCEPTION 1. This relates to the introduction in evidence of a sewing machine, by the plaintiff below, as representing his invention. This was at the beginning of the case. He first offered in evidence his patent. Then followed in quick succession Exhibits B, C, D, E, and F, representing models both of the Cramer invention and of the prior art (Rec., 35-39). After these models had been put in evidence, Cramer, who was on the witness stand, was asked if he had a full-sized machine which represented his invention. He replied that he had, and thereupon produced a machine, marked "Plaintiff's Exhibit G."

Clearly there was no error in permitting this machine to be put in evidence. The learned counsel objects to it because it did not represent the Cramer invention; but that was a matter of fact for the jury to determine. Mr. Cramer testified that it did represent his invention, and his counsel offered it in evidence as such. Consequently, that was a question of fact for the jury to determine, and no error was committed by allowing them to determine it.

But there is another reason why this exception cannot now be considered, and that is because the exhibit in question is not properly before this court. It was not made a part of the bill of exceptions and it is no part of the bill of exceptions. It is not here for examination. Consequently, it cannot be considered by this court. The proper time and place for the consideration of this matter was on motion for new trial before the lower court.

EXCEPTION 2. The assignment of error founded on this exception reads as follows:

"The said circuit court erred in overruling the "objection of counsel for defendant to the following "question and in admitting the plaintiff's following "answer thereto.

"Q. Now, Mr. Cramer, regarding the prices at "which you sold your machines, did you get any ad-

" ditional price by reason of having your improve-
" ment on the machine over the old machine?
" A. I got $5 more. I charged $5 more."

This question was answered fully by the witness before any objection was made to the same, and no motion was ever made to strike it out. In other words, when the question was asked, no objection was interposed at all, and there being no objection, the witness answered it. Thereafter counsel for defendant said:

" I submit that this is not proper testimony, if
" your Honor please. I suppose he is getting at the
" question of damages now." (Rec., 44.)

Thereupon the court said, "The objection is overruled."

Counsel did not thereafter move to strike out the answer and instruct the jury to disregard it, but he merely took an exception to the refusal of the court to rule out a question which had already been answered by the witness and which was not formally objected to at the time it was asked. Such loose practice as this should not be tolerated, and certainly cannot form the basis for reversing the judgment.

But in any event the question was proper. Counsel for the defendant did not advance any reason why

the question was improper, which fact alone would be a sufficient answer to his objection, but the question was certainly proper as showing the utility of the Cramer invention and also as an element in fixing the damages.

EXCEPTION 3. This stands on the same footing as the exception just considered. The proceedings regarding the matter appear on page 48 of the record. It will be seen therefrom that after certain questions had been put to the witness and fully answered by him, counsel for the defendant asked permission "to have the last two or three questions and answers read." This was done, and he then said:

"I object to the statement of the witness where "he used the expression, or rather where Mr. Miller "in his question used the expression, 'which you "'thought interfered with your patent.'"

The court overruled this loosely framed and ridiculous objection, and the ruling is now assigned as error. No motion was made to strike out the answer, and it is a novel practice, after several questions have been asked and fully answered without objection and have gone to the jury, for opposing counsel to have them read over to him by the reporter and then to interpose an objection and take an exception to the action of the court in overruling the objection. We

understand the rule to be that a question must be objected to before it is answered—not afterwards.

But in any event, the evidence was entirely proper. It was used merely as matter of inducement, as will be clearly seen by reference to the record. It was not intended as an expression of an opinion. It merely shows that Cramer saw a cut of the Diehl sewing machine stand which he thought interfered with his patent, and thereupon he sent a formal written notice to that effect to the Singer Manufacturing Company. It was merely for the purpose of showing his reason for sending the notice to the company. The exception appears to us frivolous.

EXCEPTION 4. The assignment of error concerning this exception sets up that the court erred "in "overruling the objection of counsel for defendant "to the testimony of the witness Seeley as to what "might be equivalents of the knife-edge bearings of "the patent sued upon, and in permitting said wit-"ness to testify as follows:

"'A. Where there are a number of forms which "'we consider to be the equivalents of each other, "'and to operate in the same way, and where the in-"'ventor has a choice or right to select from among "'them, we describe the one which he prefers to use, "'for the reason that the Patent Office requires but

"'one operative form to be shown. Of course, we "'do not limit him to that form, but use it as illus- "'trating a number of different forms which he "'might choose if he so desired.'" (Rec., 435.)

We submit that no such objection or exception was taken. By reference to page 121 of the record, the answer above quoted will be found as having been given by the witness Seeley in answer to the following question:

"Q. Right there, what is the usual custom in "writing specifications of patents with regard to de- "scribing the forms of the mechanism? Do you at- "tempt to describe all the forms, or how is that?"

Then follows the answer above quoted. No objection was interposed to this question in any way, shape or form; but, on the contrary, the witness answered it without objection, and then proceeded to give considerable testimony thereafter of a kindred character. He was asked four more questions, none of which was objected to and all of which were answered. Then it appears, on page 122 of the record, that in the middle of another question which was being propounded by Cramer's counsel, and before it was completed, Mr. Wheaton interrupted and said:

"If your Honor please, I object now to testimony "tending to show what may be equivalents of the "knife-edge bearings described in the patent, upon "the ground that the patent particularly specifies "elements that cannot be taken out of it by construc- "tion and substituting others for them," etc., etc.,

Thereupon a long colloquy took place between Mr. Wheaton and the court, and at the end of that colloquy the court said:

"I will overrule the objection with the explana- "tion already given." (Rec., 124.)

To this ruling counsel for defendant took an exception, and that forms the basis of his specification of error No. 4, which we are now considering.

It is clear that there was no such exception as the one specified in assignment of error No. 4. The answer quoted in said assignment No. 4 was given without any objection being interposed. And to make the matter still worse, several subsequent question were asked of the witness and answered, on the same subject, without any objection, before the learned counsel awoke from his slumbers and interrupted opposing counsel in the middle of another question by interposing an objection.

EXCEPTION 5. The expert witness Brown was on

the stand, and he was shown the plaintiff's exhibit P, which represented the construction of the stand sold by the Singer Manufacturing Company. After stating that he fully understood the construction in question, he was asked the following:

"Q. State what effect that construction would "have in regard to overcoming these old defects "which you mention as being inherent in the old "style of mounting." (Rec., 162.)

This was objected to, though the ground of the objection is not very clear and we cannot ascertain what was passing through the counsel's mind. The ground interposed was that claim 1 covers a combination of elements. Why that should be a ground of objection to this particular question, we are unable to conceive. The fact that claim 1 was for a combination, and not for a single element, certainly did not make the question improper. In fact, we were not talking about claim 1 of the patent at all. The subject-matter of the investigation was the defendant's machine, represented by Exhibit P. We were trying to show that by the construction shown in that machine, all of the advantages claimed by Cramer as inherent in his machine had been appropriated by the defendant, and this we certainly had a right

to do. Cramer claimed that he had made an invention, and that by the same he had obviated certain old and well-known defects in the prior art. He produced this machine, Exhibit P, as an infringement upon his patent. In comparing the same with his patent, he called this expert witness, Brown, a man of twenty-seven years experience in the sewing machine business, who was describing the infringing machine to the jury, and, amongst other things, said that such construction obviated the old defects of the prior art, which it was the purpose of the Cramer patent to accomplish. We perceive no error in this. Indeed, we cannot understand the basis upon which the learned counsel claims it to be error. It seems too plain to us for argument.

EXCEPTION 6. The specification of error (Rec., 435) in this connection alleges that the circuit court erred in striking out the testimony of the witness, F. J. Kierce, and then the testimony alleged to have been struck out is copied into the record at page 435. The testimony so given is at page 334 of the record. By referring to page 335 of the record, it will be found that the court did not strike out the entire answer, but only a portion of it, and as the specification of error is directed to the striking out

of the whole answer, a fact which did not exist, the specification is bad. It is true that the court did first strike out the entire answer, as will be seen by reference to page 334; but it is equally true that upon further consideration of the matter, as will be seen by reference to page 335 of the record, the court modified its former ruling and struck out only a portion of the answer, denying the motion to strike out all that part of the answer where the witness testified to what Mr. Cramer said. It was only the remainder of the answer which was stricken out. Clearly, therefore, the specification of error is bad, because it is aimed at something which did not exist.

EXCEPTIONS 7 AND 8. These exceptions relate to the action of the court in excluding from evidence a fragmentary portion of the record in the old case of *Cramer* vs. *Fry*. The learned counsel did not make any argument on these two exceptions in the court of appeals; consequently, there is nothing for us to answer regarding them. They do not appear to us worthy of consideration, any way; but, on the contrary, they seem to be of the frivolous character which marks so many of the alleged exceptions in this case.

It is probable that these two assignments of error,

7 and 8, as well as the preceding one, assignment 6, were intended by the learned counsel as a basis for the contention that the judgment in the old case of *Cramer* vs. *Fry* acted as a bar to the present action. If so, the answer made to such contention by the court of appeals is so perfect and complete that nothing we might say on the subject could make it any stronger. Therefore, we adopt is as our argument. It reads as follows:

"It is contended that the court erred in excluding "certain evidence which was offered concerning the "alleged complicity of the Singer Company with a "prior action prosecuted by the defendant in error "against an agent of the company. That action had "been brought in the circuit court for the northern "district of California by the defendant in error "against the company and Willis B. Fry, its agent. "The Singer Company made a special appearance "for the purpose of challenging the jurisdiction on "the ground that it was a corporation of another "state, and could not, without its consent, be sued "within the jurisdiction of the northern district of "California. Upon that ground, it obtained an "order dismissing it from the action, without preju-"dice to the right of Cramer to bring a future action "against it for the same cause. The action was there-"after prosecuted against Fry alone, and a judgment "was rendered in his favor on the ground of non-"infringement. When the present suit was subse-"quently begun against the Singer Company, it

" pleaded the judgment which was rendered for the " defendant in the action against Fry as *'res adjudi-* " *cata,'* contending that it could avail itself of that " judgment for the reason that it had employed coun- " sel to defend the action against Fry, and had de- " frayed the expenses of his defense. That plea was " sustained in the circuit court, but upon writ of " error from this court, the judgment was reversed " upon the ground that the evidence failed to show " that the connection of the Singer Company with " the defense of the action against Fry was open and " known to the opposite party. (*Cramer* vs. *Singer* " *Mfg. Co.*, 93 Fed., 636.) The case was thereupon " remanded for a new trial. Upon the new trial, " which resulted in the judgment which is now " sought to be reviewed, the plaintiff in error intro- " duced certain testimony which, according to its " contention, tended to show knowledge upon the " part of the defendant in error or his counsel of the " fact that the plaintiff in error had defrayed the " expenses of the litigation upon the part of the de- " fendant Fry. One of the attorneys for Fry testified " that, pending the litigation of that cause, one of the " attorneys for Cramer remarked to him that he did " not expect to make anything out of Fry, for the " reason that the latter was the Singer Manufactur- " ing Company's agent, but that he expected to re- " cover a judgment in that action before the jury, and " that he would make that judgment the basis of pro- " ceedings for the purpose of getting an injunction " against the Singer Company, and that he also re- " marked that counsel for Fry ought to be well paid

" by the Singer Company for the services which they
" were rendering in that action in defending it, and
" that Cramer was present and also remarked that
" they ought to be well paid by the Singer Company
" for their services. Upon motion of the defendant in
" error, all of this testimony was struck out except
" that concerning the remark made by Cramer him-
" self. Evidence was also offered from the record of
" testimony in the case of *Cramer* vs. *Fry,* in which
" it appeared that counsel for Cramer had offered in
" evidence a page from one of the pamphlets of the
" Singer Company, describing the advantages of the
" machine which the company was selling, and al-
" leged that it set forth advantages that 'the company'
" was claiming for that particular form of treadle.
" The plaintiff in error also offered in evidence the
" letter from the defendant in error to the Singer
" Manufacturing Company, of date February 8,
" 1883, directing the company's attention to the ad-
" vantages of his patent. This was offered upon the
" theory that because it was introduced in evidence
" in the case of *Cramer* vs. *Fry* it must be inferred
" that Cramer's counsel knew that that case was being
" defended by the Singer Manufacturing Company.
" We find no error in the exclusion of any of this tes-
" timony. None of it tended in the remotest degree
" to prove knowledge on the part of counsel for the
" defendant in error of the fact that the Singer Com-
" pany was in any way connected with the defense of
" the case against Fry. There was no evidence to
" prove that any fact was ever communicated to the
" defendant in error or his counsel, or that anything
" came to their notice from which such knowledge

"might be imputed. If, indeed, counsel for the de-
"fendant in error supposed that the plaintiff in error
"intended to pay for the services of Fry's attorneys,
"it was, so far as the record informs us, the merest
"conjecture on their part. The suggestion that the
"company ought to pay for those services is wholly
"consistent with an entire absence of knowledge
"upon that subject. To the suggestion so made, so
"far as the evidence shows, there was no response;
"no information was offered. The fact that counsel
"for Cramer intended to use their judgment, in case
"they obtained one, as the basis of an injunction
"against the company, indicates, if anything, that
"they believed the company would not be liable as
"a judgment debtor upon such judgment. The open
"dismissal of the Singer Company from that suit,
"upon its own motion, was significant of its with-
"drawal from the litigation and of its purpose not to
"be bound by the judgment to be rendered therein.
"Why should that company have taken the pains to
"assert its right to be dismissed as a party defendant
"to that action if it did not intend thereby to place
"itself in a position where it could not be affected by
"the judgment? Its dismissal from the action was
"wholly inconsistent with an intention to be identi-
"fied with Fry as a defendant to be bound by the
"judgment. The judgment entry dismissing it ex-
"pressly reserved the right of the plaintiff in that
"action to again sue the corporation upon the same
"cause of action. Both the dismissal and the reserva-
"tion of that right were empty and idle acts of the
"corporation intended to maintain such connection
"with the action as to be concluded by a judgment

" therein. As against the overt declaration of its atti-
" tude to that litigation, the evidence of its continued
" connection with the defense must needs be definite
" and certain, and must not rest in suspicion or con-
" jecture. The evidence which was offered, and
" which was excluded by the court, did not tend to
" sustain the conclusion that Cramer or his counsel
" had knowledge that the Singer Company was, after
" its withdrawal from the action, identified with the
" defense."

EXCEPTION 9. This relates to the refusal of the trial court to allow the defendant below to put in evidence the opinion of Judge McKenna from the old case of *Cramer* vs. *Fry*. Clearly, there was no error in this, and it would have been a gross violation of a well-settled rule of law if the court had allowed that opinion to go in evidence and to be read to the jury. Under such circumstances, the opinion of the court is entirely incompetent for any purpose whatever.

Dickerson vs. *Planters' Bank*, 16 Wall., 250.
Stone vs. *U. S.*, 164 U. S., 382-3.
British Q. M. Co. vs. *Baker*, 139 U. S., 222.
Lehnen vs. *Dickson*, 148 U. S., 71.
Saltonstall vs. *Birtwell*, 150 U. S., 417.

EXCEPTION 10. This exception relates to the action of the court in sustaining an objection to the fol-

lowing question asked of the witness Angel, viz:
"Q. I want to ask you whether you can find in the
"Cramer patent any of the changes which you found
"existing between the defendant's old trade-mark
"stand and the defendant's present Diehl stand?"
(Rec., 366.)

This question was purely argumentative, and did not call for a question of fact. The witness had already described the Singer Company's trade-mark stand and its Diehl stand, and those matters were before the jury as questions of fact. What the counsel means by asking if the *changes between those two stands* were found in the Cramer patent is somewhat difficult to understand. It appears to be one of those technical and nebulous theories for which the counsel is so famous. The question at issue was not whether the changes between the Singer Company's trade-mark and Diehl stands were found in the Cramer patent, but the question was whether the Diehl stand was an infringement of the Cramer patent. and the proper way to determine that was to compare the two together under appropriate instructions from the court as to the scope of the Cramer patent. This awkward, roundabout, and cumbersome way to reach it by asking whether the changes between the

trade-mark and Diehl stands were found in the Cramer patent was improper, because it was argumentative and otherwise incompetent, calling for an opinion and legal conclusion, not for a fact.

But further, the question was improper from another point of view, and that is this: It is a well-settled rule of law that it is improper for expert witnesses to compare the defendant's infringing machine with those of the prior art. It is proper to compare the plaintiff's patented machine with devices of the prior art; but it is not proper to so compare the defendant's infringing machine.

III.

Refusal of the Court to Instruct the Jury that a Witness False in One Part of His Testimony is to be Distrusted in Others, Embodied in Assignment 13.

Plaintiff in error requested the court to instruct the jury that a witness false in one part of his testimony is to be distrusted in others. This is assignment of error No. 13. (Rec., 437.) The instruction as requested was taken bodily from the code of civil procedure of the state of California . (Section 2061.) Passing for the moment the question whether provi-

sions of the code of California are of binding force and obligation upon the federal courts, we concede, for the sake of argument, that the maxim, "*falsus in uno falsus in omnibus,*" is in force under the common law, and that the section cited in the requested instruction is substantially equivalent to the maxim quoted. Both the maxim and the section cited, however, have their established construction and their appropriate limitations.

In *People* vs. *Strong* (30 Cal., 155), decided in April, 1866, an instruction was requested in a prosecution for murder substantially similar to that in the case at bar. It was refused, and an exception was reserved. On appeal, the supreme court of California held that the instruction did not present a correct principle of law; that the rule of credibility did not apply to mistakes which were the result of error, inaccuracy, and embarrassment, without any real intention to misrepresent or deceive. In other words, the false testimony which would justify a jury in rejecting distrusting the testimony of a witness must be *willfully false* and upon a *material matter.*

The code of civil procedure went into effect on the first Monday in January, 1873, nearly seven years after the decision in *People* vs. *Strong*. Conceding

that section 2061 is a substantial expression of the maxim, it is only necessary to say that every case in which the section has been construed by the supreme court of California, since that time, has approved and followed *People* vs. *Strong* in direct terms.

People vs. *Plyler,* 121 Cal., 163.
People vs. *Sprague,* 53 Cal., 494.
People vs. *Soto,* 59 Cal., 368.
People vs. *Flynn,* 73 Cal., 511.
People vs. *Righetti,* 66 Cal., 184.
People vs. *Clark,* 84 Cal., 573.

The instruction requested by the learned counsel in the case at bar omits two important and essential elements and qualifications of the rule, viz: that the testimony must be *willfully false,* and that it must be on a *material matter.* Under the construction as requested, the jury would have been justified in disregarding the entire testimony of a witness on account of a single unintentional error or inaccuracy on a trivial or collateral subject. This is not and never was the law.

Again, we contend that the giving of such an instruction must be to a large extent a matter of discretion with the trial judge. He must, in the first place, decide whether there is anything in the testi-

mony of a witness or class of witnesses which would make such an instruction necessary or proper. He may have been of the opinion that an alleged contradiction in different parts of the testimony of the same witness, or in the evidence of the same witness given at different times, was more apparent than real. He may have considered, in the case of conflicting testimony of witnesses on opposite sides on the same point, that the case had to be laid before the jury without any expression of opinion on his part calculated to damage either witness. The cases are rare in all the reports in which the giving of a similar instruction has been justified. There are many in which the refusal of such an instruction has been approved.

There was nothing in the testimony of the witness Cramer in the case at bar which made such a charge either necessary or proper. The gist of the argument of counsel for plaintiff in error is, that upon the trial of the former action, *Cramer* vs. *Fry,* in 1895, Cramer did not carry his invention back of 1882. There is no contradiction, apparent or real, between his testimony in that case and this. No charge of a contradiction can be predicated upon an omission to testify on a former occasion. The witness was not the judge

of what questions should be asked or answered on the former trial. He was in the hands of his former counsel, whose views of the issues in the case, and the evidence necessary to maintain them, may have differed from those of his present counsel in the case at bar.

The contention that Cramer should be discredited is based upon the allegation that he testified differently in a different case, that is, in the case of *Cramer* vs. *Fry*.. We have already shown that the alleged contradiction is unfounded; that there can be no contradiction between what a witness has failed or omitted to assert in a former trial and that which he did assert in the pending cause. But, even if a contradiction did exist, it furnishes no just ground or basis for the giving of the instruction refused. Such instruction can only be given upon the assumption by the court that the former testimony was true and the latter false; but this assumption cannot be made by the court. The question must go to the jury without any indication, express or implied, of the court's opinion on the point.

The case of *Carroll* vs. *Sprague* (59 Cal., 655) is conclusive on this point.

The second ground of attack upon the testimony of the witness Carmer is based upon his statement

that he was driven out of business by the Diehl machine in 1885, whereas it is asserted by counsel for plaintiff in error that the Diehl machines were not sent into Tuolumne county until 1886. From this the learned counsel argues that Cramer's testimony in this respect was false, which furnishes the foundation for disbelieving him in others. But the conclusion does not follow by any means. The Diehl patent was applied for on May 29, 1884, and was issued on October 14, 1884. (Rec., 85.) It is generally the custom to put a new machine upon the market either at the time of applying for the patent or prior thereto. The usual course is first to test it and ascertain its merits, and then apply for a patent. Indeed, the law allows two years use before it is necessary to apply for a patent. It is highly probable, therefore, that the Singer Manufacturing Company put these Diehl machines on the market prior to May 29, 1884 (the date of the application), or, at least, prior to October 14, 1884 (the date of the patent).

Furthermore, opposite page 52 of the record will be found the catalogue of the Singer Manufacturing Company for 1885, and on pages 3 and 24 of said catalogue will be found cuts of the Diehl machine. The reading matter of the catalogue shows unmistakably

that at that time the Diehl machines had been put into very extensive use.

But further, if it should be a fact that the Diehl machines did not actually reach Tuolumne county until 1886, that would not be a denial of Cramer's testimony. It is entirely within the bounds of reason that the Singer Company, by its extensive advertisements and catalogues distributed in Tuolumne county in 1885, showing the merits of the Diehl machine, could have taken orders for the same, and thereby run Cramer out of business, although the machines themselves might not have been delivered until 1886. That the Singer Company was advertising its Diehl machines in 1885 is proven by their catalogue at page 52 of the record. Therefore, the alleged fact that the machines did not actually reach Tuolumne county until 1886 becomes immaterial, and under such circumstances the maxim does not apply.

IV.

EXCEPTIONS ON THE SUBJECT OF THE DIEHL PATENT AS EVIDENCE, EMBODIED IN ASSIGNMENTS OF ERROR NOS. 36, 37, 40, 41, 42 AND 64.

AS TO EXCEPTION 36: It merely states that the defendant's machines were made under the Diehl patent, and the court gave the equivalent of that instruc-

tion, as will be seen by reference to the general charge found at page 424 of the record, where it is said:

"The defendant's device is made under and in "accordance with letters patent of the United States, "issued to the Singer Manufacturing Company as "assignee of Philip Diehl, which patent is subse- "quent to the date of the Cramer patent, the Cramer "patent being dated January 30, 1883, and the Diehl "patent of October 14, 1884."

Under these circumstances it is a little singular that the counsel should have the hardihood to allege error.

EXCEPTION 37. This relates to the refusal of the court to give the following instruction requested on the part of defendant in the court below, viz.:

"The jury are instructed that the defendant's pat- "ent is *prima facie* evidence that the alleged inven- "tions which are covered by its claims were new and "useful when they were made by said Philip Diehl, "the plaintiff's assignor, and in this respect the de- "fendant's patent is *prima facie* evidence for the de- "fendant to the same extent as the plaintiff's patent is "*prima facie* evidence for the plaintiff."

While the proposition of law announced in this request may be correct as an abstract proposition of law, it has no application to the facts in hand. The *prima facie* presumption in every patent relates to *the*

claims of the patent, and, therefore, the issuance of the Diehl patent is *prima facie* evidence that the inventions *covered by its claims* were new and useful. Otherwise he could not have procured a patent. But we are not concerned in this case about the claims of the Diehl patent. What we are concerned about is the construction of the *Diehl machine* in regard to its being an infringement upon Cramer's claims. The most casual reading thereof shows what his claims mean. Now, inasmuch as these claims were not in issue in the case at bar, and were not even a material or relevant fact, it was not error for the court to refuse to give the instruction in question, which was intended merely to say that *those claims* of the Diehl patent were *prima facie* new and useful.

All that was necessary to be said concerning the effect of the Diehl patent was said by the court in the general charge. After telling the jury that the defendant's machines were made under and according to the Diehl patent, the learned judge proceeded as follows:

"The mere fact, however, that the Diehl patent "was issued to the Singer Manufacturing Company "is not conclusive evidence that the device therein "shown is not an infringement of the Cramer patent. "It may be merely an improvement. That is a ques-

" tion of fact for you to determine, and if you deter-
" mine that the Diehl structure is in some respects an
" improvement, but in others an infringement of Cra-
" mer's patent, the fact that the patent was issued to
" the defendant for the Diehl structure subsequent
" to Cramer's patent will afford no protection to the
" defendant against the charge of infringement. It
" very frequently happens that, after a patent is
" issued to one person, another person may subse-
" quently secure a patent as an improvement upon the
" first; but such subsequent patent affords no protec-
" tion to the holder thereof against the charge of in-
" fringement of the first patent if, as a matter of fact,
" there be infringement. To determine whether a
" subsequent patent is an infringement of the prior
" patent, or of a claim of the prior patent, it is neces-
" sary to compare the device or combination of the
" later patent with that of the prior patent or claim,
" and ascertain whether any element of the prior pat-
" ent or claim has been appropriated or adopted in
" the subsequent patent. To aid you in such an in-
" quiry I will read to you the five claims of the Diehl
" patent."

This extract from the charge embraces a correct exposition of the law on the subject in hand, and furnishes all that was necessary for the jury. The question was whether the structure illustrated and described in the drawings and specification of the Diehl patent was an infringement of the Cramer patent, and not whether the improvements added to the

machine by Mr. Diehl, and for which he got his claims, were new and useful. Those improvements consisted in mounting both the band wheel and the treadle in the vertical brace, and if it be conceded that this was an invention, that fact would not authorize the company to infringe Cramer's patent. In mounting both the band wheel and treadle in the brace Diehl necessarily used the Cramer idea of mounting the treadle in the brace, and it can be no excuse for that piracy to say that he has also mounted the band wheel in the brace in conjunction with the treadle.

EXCEPTION 40. The same remarks apply to this as to the exception last considered, but in an aggravated degree. By this request the court was asked to tell the jury that it was a very important question for them to consider whether the defendant's machines were covered *by the claims of the Diehl patent*, and the request then proceeded to give reasons therefor. We have already shown that this was not an important question, and, in fact, was an immaterial one. The fact that the machines in question were covered by the claims of the Diehl patent was not inconsistent with the theory of infringement upon the Cramer patent. Consequently, the jury could not have been

aided in any degree whatever by being told that the defendant's machines were covered by the claims of the Diehl patent. Furthermore, the proposed instruction is improper in form, because it is argumentative. It is more in the nature of a partisan and highly colored argument to a jury than of a dispassionate statement of the law by a disinterested judge. Its phraseology is such that it would have been highly improper to give it in that form.

EXCEPTION 41. This is on the same footing as the exception last considered. It refers to the "several claims" of the Diehl patent, a matter about which the jury had absolutely nothing to do.

EXCEPTION 42. This is on a line with what has already been said. The proposed instruction is nothing more than an argument on behalf of the plaintiff in error, and for that reason it would have been highly improper to go to the jury from the court. It also contains the same vice as the preceding exception. For instance, it says: "The said Diehl patent, "being later in date than the plaintiff's patent, it "is evidence which tends to prove that the inventions "covered by it were made after the plaintiff, Cramer, "had completed the inventions which are described "in or covered by his patent," Now, the "inventions

covered " by the Diehl patent are those covered by his *claims,* and those claims are nothing more than claims for certain improvements in sewing machine stands not affecting the invention covered by Cramer's claim. Of course, those Diehl inventions were made subsequent to Cramer's patent; but they have nothing to do with the controversy here, being mere improvements, which were possibly original with Diehl, but which, after all, were nothing more than improvements upon the Cramer invention. Cramer mounted his treadle in the vertical brace. That constituted his invention. Diehl came after him and mounted his treadle in the brace, and in addition thereto also mounted his band-wheel in the brace. If Cramer's claim for mounting the treadle in the brace is valid, Diehl does not avoid infringement by adding to that feature the additional one of mounting his band-wheel in the brace, so that both the treadle and the band-wheel are mounted in the brace. In other words, Diehl cannot, by adding to or improving upon Cramer's invention, appropriate to himself and use the Cramer invention. If a thief steals my horse, he gets no title to the animal merely because he uses his own saddle and bridle while riding him.

EXCEPTION 64. This exception is aimed at that portion of the court's charge which was given upon the subject of the Diehl patent. We submit that the language used by the court was proper and constituted a correct exposition of the law on the subject. It is found at pages 424 and 425 of the record. In substance it tells the jury that the defendant's machines are made under a subsequent patent, but that such fact is not conclusive evidence of non-infringement; and in order to determine the question of infringement, the jury must compare the two structures, and if they find that the Diehl structure is in some respects an improvement, but in others an infringement on Cramer's patent, then the fact that a patent was issued to Diehl does not protect him. This is a true exposition of the law, and being such, it was all that was necessary to go to the jury.

V.

EXCEPTIONS RELATING TO DAMAGES EMBODIED IN ASSIGNMENTS OF ERROR NOS. 24, 25, 66, 67 AND 68.

EXCEPTION 24. This exception is without merit, because the substance thereof was given by the court.

The instruction as requested by the counsel reads as follows:

"It is admitted by the plaintiff that there has not "been any infringement by the defendant of the sec- "ond claim of the patent. Damages are now claimed "for an alleged infringement of the first claim of the "patent only. The jury, therefore, should not pay "any attention to the second claim of the patent, but "should decide the case just as though that claim "were not in the patent at all."

By reference to page 418 of the record it will be found that the court instructed the jury as follows:

"The patent in this case contains two claims. It is "not charged that there has been any infringement "of the second claim of the patent, and the present "suit is to obtain damages for the alleged infringe- "ment of the first claim only."

In substance this is not different from the instruction requested by the counsel for the plaintiff in error. Hence Exception 24 is without merit.

EXCEPTION 25. This request for an instruction reads as follows:

"The defendant has not introduced any evidence "tending to prove any damages that have resulted to "him from any infringement of said first claim "alone. If, therefore, you should find that said first "claim had been infringed by the defendant, the

"damages assessed should be nominal; that is, one "dollar or more."

This requested instruction assumes that there was an entire absence of evidence on the matter referred to therein, and, of course, if there was any evidence whatever on the subject proper to go to the jury, it was no error to refuse the instruction, because that was a matter of fact for the jury to determine. The generic propositon included in this instruction has already been discussed by us in that portion of the brief relating to the request for instruction to the jury to find for defendant on the ground of no infringement, and it will not be necessary for us to say anything further thereon. The narrow or specific view covered by the requested instruction demands a few additional words.

The theory of the learned counsel seems to be that the evidence of damages adduced by the plaintiff related to both claims of the patent, and that there was no evidence whatever offered for the purpose of apportioning those damages between the two claims. Consequently, he argues that there could be no verdict for damages other than a nominal amount.

This doctrine is known in patent law as "segregation of damages," and is of an exceedingly technical

character. While theoretically founded on right and justice, its application is so difficult, that in nearly all the cases where it has been applied, it has resulted in wrong and injustice.

Briefly stated, it is to the effect that where a patent contains a plurality of claims and only a portion of those claims have been infringed, the damages awarded must be such as are attributable to the infringed claims only, and not to the whole machine, and the burden of proof is on the plaintiff to apportion those damages with a view to showing what part thereof is attributable to the infringed claims. The hardship of this rule lies in the practical difficulty of applying it. A patentee may have suffered the heaviest damages by infringement of some of the claims of his patent, and yet he may be unable to segregate those damages by legal proof so as to find out the exact proportion thereof attributable to the infringed claims. In such case there would undoubtedly be a failure of justice, and a strict application of the rule would result in wrong and injustice. To meet such emergency, modifications to the rule have been made, which will be noted later on. We now formulate our answer to the contention advanced by our adversaries regarding this proposed instruction:

1. *In the first place, as a matter of fact the evidence given on the subject of damages related to claim 1 only, and did not include claim 2. In other words, there was a segregation of damages.*

The plaintiff's theory of damages was that of *lost sales.* He granted no licenses, and consequently, there was no established license fee to be used as a measure of damages. The mode he elected for the enjoyment of his patent was to keep a close monopoly thereof to himself by manufacturing and selling the patented device and enjoying the profits thereof. He was engaged in the business of selling sewing machines, and by reason of this patented feature he was enabled to obtain an increased profit over the machines which he sold. In that way he built up a remunerative business. The defendant, by putting the infringing machine on the market in competition with the plaintiff, and by selling at a lower price, was enabled to, and did, ruin and destroy the business of the plaintiff and compel him to retire therefrom. Solely by reason of the infringement, therefore, the defendant was enabled to sell a large number of its machines containing the patented feature of claim 1. The plaintiff was able and willing to supply this demand, and would have supplied it if the infringement had not intervened.

Under such circumstances, the proper measure of damages is the amount of profits which the plaintiff would have made if he had sold of his own machines the same number which the defendant sold of its machines, the theory being that but for the infringement plaintiff would have sold the same number of machines. This was the plaintiff's theory of damages in the lower court, and it is a correct one. Much evidence was given on the subject and on all the elements of the proposition necessary to make out a case. This evidence was submitted to the jury and they passed upon the same. The evidence so adduced was directed specially to claim 1 of the patent, and was purposely framed to exclude claim 2.

The essence of claim 2 consists of a cushion F, and the block f, referred to in the testimony as "mufflers," and used for the purpose of rendering the machine noiseless. These devices have no relation to the fundamental invention of mounting the treadle in the brace. In other words, the broad fundamental invention of mounting the treadle in the brace is covered by claim 1, and the subsidiary feature of the mufflers is covered by claim 2. Now in the machines sold by Cramer he discarded the mufflers of claim 2, and used only the invention of claim 1. Those ma-

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chines were represented by the plaintiff's Exhibit G, and in those machines the cushion and block of claim 2 were not used. When this model was offered in evidence it was objected to on the ground that it did not represent the Cramer patent (Rec., 41), and the reason advanced in argument for that contention was the assertion that said exhibit did not contain the said cushion and block. See brief of Wheaton & Kalloch, pages 135-6-7, in the court of appeals.

At page 135 of that brief it is said: "The plaintiff "offered the machine, Exhibit G, in evidence as a "full-sized machine that represented the invention "of the plaintiff. The exhibit differs from the pat- "ent, in that it does not have the long vertical loops "through the brace, which the patent says are to per- "mit the entrance of the treadle. Neither does Ex- "hibit G have the cushion F or block f that are "called for by the second claim of the patent."

And also at page 137 of said brief, referring to Exhibit G, it is said: "It was the kind of stand that Cramer made and sold. He testified that he made a "profit of three and a half dollars on each of them "that he sold."

Also, at page 41 of said brief, it is said: "While "at first glance the fact that Mr. Cramer made the "treadles which he sold without any cushion F or "block f," etc., etc. * * * We believe there is

no proof that Mr. Cramer could ever have sold a single one of his treadles if he had made them with the cushion F and block f, as called for by his patent."

It is not only clear from the record, but the fact was conceded in the lower court, that in the machines which Mr. Cramer actually sold the cushion and block of claim 2 were not used. In other words, Cramer embodied the invention of claim 1 only in the machines which he sold, and did not use the invention of claim 2. Consequently, there was no occasion for the segregation of damages, because the damages flowed from infringement of claim 1 only, it being conceded that the defendant had not used claim 2 and that in the machines which Cramer sold neither did he use claim 2. The matter stands, therefore, just as though there was only claim 1 in the patent, and no other claim at all, and the law cited regarding the segregation of damages as between claims has no relevancy. Of course we understand the rule that where only one of several claims is infringed the damages must be segregated, but if there is only one claim in a patent, then there is no case for segregation, and if there be several claims in a patent, but only one of them is infringed, and if the patentee himself used only that one claim

in actual practice and the evidence of damages adduced related only to that one claim, then the matter stands on precisely the same footing as though there was only one claim in the patent. Such was the case at bar. The court of appeals in its opinion said:

"There was testimony to the effect that the de-
"fendant in error in the years 1881-2-3-4 sold sew-
"ing machines *containing claim 1* of his patent and
"that the cost of putting *the same* into each machine
"was $1.50, and that his net profit on each machine
"sold *containing claim 1* was $3.50, and that when
"the plaintiff in error put upon the market a machine
"which contained the infringing device, and sold
"the same at a lower price than that at which the
"defendant in error had sold, the business of the
"latter was inqured, and he was compelled to with-
"draw from the field."

We take this to be a finding in effect that Cramer used only claim 1 in the machines which he sold.

2. *In the next place, this proposed instruction was improper, because the entire value of the Cramer machine as a maketable article was properly and legally attributable to the patented feature of claim* 1, *and the feature embodied in claim* 2 *added nothing whatever to the value of the machine as a marketable article.*

This rule of law is a limitation on the general rule heretofore adverted to and is found in the leading case of *Garrettson* vs. *Clark*, 111 U. S., 121. It was formulated by Judge Blatchford on the trial of that case in the lower court, and the rule as announced by him was adopted by this court on appeal in a decision rendered by the late Mr. Justice Field, where it was said:

"The patentee must in every case give evidence "tending to separate or apportion the defendant's "profits and the patentee's damages between the "patented features and the unpatented features, and "such evidence must be reliable and tangible, and "not conjectural or speculative; *or he must show, "by equally reliable and satisfactory evidence, that "the profits and damages are to be calculated on the "whole machine, for the reason that the entire value "of the whole machine as a marketable article, is "properly and legally attributable to the patented "features.*"

Other cases where the rule has been applied by this court are:

Crosby Valve Co. vs. *Safety Valve Co.*, 141 U. S., 454.

Hurlbut vs. *Schillinger*, 130 U. S., 471.

Callaghan vs. *Myers*, 128 U. S., 665.

Root vs. *Railway Co.*, 105 U. S., 203.
Elizabeth vs. *Pavement Co.*, 97 U. S., 139.

Now apply the rule to the facts in hand. In the first place it must be conceded that the invention of claim 1 is fundamental in character and is the feature which gives to the Cramer machine its value. The invention of claim 2 is merely subsidiary to the fundamental invention of claim 1.

In the second place the evidence shows that in actual practice Cramer did not use the invention of claim 2 in the machines which he sold, as we have already pointed out herein, and as was openly conceded in both the oral and printed arguments of counsel for the Singer Company in the lower court.

It also appears from the evidence, without any pretense of dispute, that by reason of the use of the invention of claim 1 Cramer was enabled to sell his machines for five dollars more apiece than any machine not containing the invention. The cost of inserting this additional invention into the machine was $1.50 each, thus leaving a net profit of $3.50 on each machine, due solely and entirely to the presence therein of the invention of claim 1.

And finally the testimony shows, without dispute, or any attempt at dispute, that the invention of claim

2 did not contribute in any way to the marketable value of the machine. At page 60 of the record we find the following testimony given by Cramer:

"Q. Mr. Cramer, something is said in your pat-
"ent with regard to a cushion marked F, and a
"block *f*. Just state what is the object of that de-
"vice in the construction.

"A. The loop holes have to be large in the base,
"in order to admit of the treadle being moved in,
"and this block and cushion, as it is called, is put up
"on the top to fill up this hole so that you cannot
"raise up the treadle. That is, if one wants to pur-
"posely raise up the treadle, they could do it so much
"better without that block in there. That is all the
"block is in there for.

"Q. Suppose no block was in there at all: could
"you run the machine just as well?

"A. *Just as well. It is not essential to the run-*
"ning of the machine at all.

"Q. Would the parts be in alignment?

"A. Yes, sir.

"Q. And you say the object of the block was to
"prevent any one lifting it out by hand.

"A. Yes, sir.

"Q. The piece of leather is also said to be fitted
"into the groove on the upper side of the trunnions:
"what is the object of that piece of leather?

"A. That makes it still softer, and it would make
'less noise if there was a piece of leather there than
"it would just with a piece of wood. It is kind of
"an extra thing.

"Q. And that you thought would be some sort "of an additional improvement if you added it.

"A. It makes it a little softer.

"Q. You mean for the operation of the trun- "nions?

"A. Yes, sir.

"Q. *But you say that is not essential to the mech- "anism or the operation of the machine.*

"A. *No, sir; it is not.*"

At page 72 of the record we find the following testimony from Cramer on cross-examination:

"Q. Have you read your patent so as to know?

"A. Yes, sir; I have read it time and time again. "But I do not understand, and never did understand, "that this block was essential to the working of the "machine. It is not essential to the working of the "machine in the least."

At page 105 of the record we find the following testimony from Cramer on cross-examination:

"Q. The idea here, is it not, is that if you "left out the leather F, or some other soft material in "place of it, over the top end of the trunnion, that "then the treadle would be permitted to bounce and "thump endwise, and so forth?

"A. No, sir; unless you caused it to do so.

"Q. Did you ever use one of your knife-edged "trunnion treadles without putting in the cushion "and block?

"A. Yes, sir.

"'Q. Did you do it before you took out your pat-
" ent or applied for it?
" A. Yes, sir.
" Q. *Did you find it work just as well without*
" *that cushion as with it?*
" A. *Just as well.*"

And on page 106 we find the following testimony from Cramer:

" Q. Was the use of that cushion and block any
" improvement or not?
" A. No improvement in its motion whatever.
" It is just for the purpose as I stated there.
" Q. What is the improvement that is created by
" the use of the cushion and block?
" A. If you have no cushion and block in there,
" you take out the machine like that (illustrating),
" the treadle would be to one side like that; or if any
" one wants to go and shake it like that (illustrating).
" Q. They never do that while using the machine
" as a sewing machine?
" A. No, sir; but I have seen you do it here
" once."

On page 109 we find the following testimony from Cramer on cross-examination:

" Q. Now, Mr. Cramer, to cut it short, when you
" take out this large block and leave that long open-
" ing shown in figure 2 of your patent and described
" in the specification, what is there to keep the bear-
" ing of the treadle in place or in alignment?

"A. The natural gravity of the treadle and your "foot being on the top to work it. That is all."

And on page 113 of the record we find the following testimony from Cramer on cross-examination:

"Q. Then the defect which your cushion and "block was to cure was merely a defect that was cre- "ated in your machine and which did not exist in "other machines?

"A. I do not see any defect there. It is an auxil- "liary adjunct to to the treadle, to the peculiar shape "of that machine; *not a necessary element to the "machine at all.*"

The witness Herman Cramer, Jr., gave testimony to the same effect, on page 176, as follows:

"Q. In your father's construction there is a "wooden block and leather cushion put in the brace over the bearing. Did you ever operate the machines "without that?

"A. Yes, sir.

"Q. How did they operate?

"A. *Just as well. They are not needed in there "so far as I can see, as regards the operation of the "treadle.* * * *

"Q. You found out they could be operated suc- "cessfully without the block?

"A. *Unquestionably.*"

The plaintiff's expert witness, A. C. Brown, gave

similar testimony on pages 172-3 of the record, as will be seen by the following excerpts therefrom:

"But the thing that I see about that, as far as the "bearing is concerned and as far as the whole con- "struction is concerned, is that the treadle is hung in "the brace. That is where I contended all along, and "always have contended, is the great advantage. As "to the different bearings that are used, it does not "make much difference about that. * * * With "that cushion that you speak of, brought away from "there it does not necessarily follow that the treadle "is going to get out of place. * * * *The only "merit I saw in the whole thing,* as far as my look- "ing at it is concerned, *is the treadle being hung in "the brace.* I care nothing about the bearings. Of "course I care about the treadle being hung in the "brace. I think that is a fine thing. It has obvi- "ated a great many of the objections that there were "to treadle construction before. * * * *I think "it would work very well with that block and cush- "ion left out,* if the machine was sitting still in regu- "lar working order. The bearing is right there, it "works right along, and there is nothing to move it "around, unless you pick up the machine, and in "moving it it falls out, and then I think it would fall "back into its place again. * * * *I say it would "work first rate without the cushion and without the "block."

It also appears from the testimony, without any dispute, that Cramer was enabled to get five dollars

more for each machine containing his invention than he could without it. This is proven by the testimony of Herman Cramer (Rec., 41, 44), Herman Cramer, Jr., (Rec., 177), Mrs. Abbott (Rec., 155).

Not the slightest attempt was made to contradict these witnesses, and their testimony stands unimpeached and unchallenged as admitted facts in the case. In view thereof we submit "that the entire "value of the whole machine as a marketable article "is properly and legally attributable to the patented "feature" of claim 1, thus placing the case within the rule of law announced by this court in *Garrettson* vs. *Clark*.

An instructive case on this subject is *Asmus* vs. *Freeman*, 34 Fed. Rep., 902, where it is said:

"We find no substance in the objection that the de- "vice covered by claim 7 was not used by respondent. "The claim infringed (the first) covered the entire "invention. The seventh is structural merely, cover- "ing a method of constructing the 'slag discharge "piece' so as to regulate the cooling process em- "braced in the first. The master did not pass on this "question. We may infer, however, from what is "said, that he considered it immaterial. The gener- "al rule is that, where less than the whole number "of claims has been infringed, evidence must be ad- "duced to show the value of the part taken. This "is inapplicable, however, where, as here, the claim

" infringed embraces the whole invention, and the " others are simply structural. (*Wescott* vs. *Rude,* " 19 Fed. Rep., 830; *Thread Co.* vs. *Thread Co.,* 27 " Fed. Rep., 865; *Tondeur* vs. *Stewart,* 28 Fed. " Rep., 561.) The respondent admits that the sev- " eral claims between the first and seventh are of this " character. We think it reasonably plain that the " seventh also is. Furthermore, the proofs show that " the license fee paid was the value placed on the use " of the invention, irrespective of the device covered " by the seventh claim. While it is not shown that " this device was ever used, it is shown that generally " it was not. It seems to have been regarded as value- " less, and for this reason was not used by the respon- " dent. The master reports that ' it was admitted by " 'their counsel in argument before the master that " 'the respondents did not regard the method of claim " '7 as being of any practical value, and that had they " 'so regarded it they would have adopted it and prac- " 'ticed it.' This view respecting the value of the " seventh claim is of itself conclusive. It is said the " master is mistaken regarding the imputed admis- " sion. However this may be, he virtually reports the " matter covered by the claim as valueless; and the " proofs seem to justify this conclusion."

But outside of all direct testimony on the subject, this court can for itself see that the value of the Cramer machine must be due solely and entirely to the fundamental invention of mounting the treadle in the brace covered by claim 1, and that the mufflers

of claim 2 constitute an insignificant feature of the machine of no particular value. The relative value of the two claims is too apparent to admit of discussion, for it is a palpable and self-evident fact that the great value of the machine as a whole is due to the feature covered by claim 1. In such case this court, in the exercise of its high prerogative, will disregard all narrow-minded and technical refinements and look only at the equities of the controversy in order to mete out substantial justice. The primary object of courts is to administer substantial justice and not merely to enforce artificial rules of practice and indulge in nebulous refinements of reasoning.

In disposing of the question raised by the assignment of error now under consideration the court of appeals said:

"Several of the assignments of error are directed "to the instructions given by the court to the jury "upon the subject of damages. There was testimony "to the effect that the defendant in error in the years "1881-82-83-84 sold sewing machines containing "claim 1 of his invention, and that the cost of putting "the same into each machine was $1.50 and that his "net profit on each machine sold containing claim "1 was $3.50, and that when the plaintiff in error "put upon the market a machine which contained "the infringing device, and sold the same at a lower "price than that at which the defendant in error has

" sold, the business of the latter was injured and he
" was compelled to withdraw from the field. The
" court instructed the jury as follows: 'The evidence
" 'as to the amount of damages claimed by plaintiff
" 'is not very satisfactory, but it may be that the ac-
" 'tual sales made by the defendant in this district
" 'of sewing machines containing the alleged in-
" 'fringing device for the period named could not
" 'have been ascertained without great labor and de-
" 'lay, and as a practical way of presenting this evi-
" 'dence the plaintiff has done all that could be rea-
" 'sonably expected under the circumstances.' That
" which the defendant did to show the extent of the
" infringement was to call upon the plaintiff in er-
" ror to disclose the number of machines it had sold
" within the district, under the Diehl patent. For
" this purpose the agent of the Singer Company was
" called as a witness. It was then agreed between
" the parties that in view of the difficulty of ascer-
" taining the exact number of such machines sold,
" the agent might estimate the same. He estimated
" the number at 12,456. The jury in assessing the
" damages apparently allowed $1.00 for each ma-
" chine sold. We do not see that the instruction
" above quoted or any of the instructions given by
" the court concerning the question of damages was
" erroneous or that the court erred in refusing to give
" instructions asked for by the plaintiff in error. The
" defendant in error had a monopoly of his own in-
" vention. He had not sold the right to any other to
" manufacture or to vend the same. He had fixed a
" price of $5.00 extra for each machine containing

" his treadle, or a net royalty of $3.50. He testified " that he was able and ready to supply the demand " for his improvement and that his market was de- " stroyed by the action of the plaintiff in error. Con- " cerning the damages sustained by a patentee from " infringement, Walker in his work on patents, sec. " 563, says: ' If he maintains a close monopoly and " 'is ready and able to furnish the whole market with " 'the patented articles he must prove by satisfactory " 'evidence the advantages gained by the infringer in " 'the unlawful use of the patent over and above the " 'advantages which he could have derived from the " 'use of similar articles unpatented and open to the " 'use of the public; or must prove the loss or falling " 'off of his own sales in consequence of the infringe- " 'ment or a loss by the compulsory reduction of " 'prices made necessary by the competition of the in- " 'fringer. The rule varies with the special circum- " 'stances of the particular case.' " Citing *Seymour* vs. *McCormick,* 16 How., 480; *Philp* vs. *Nock,* 17 Wall., 460, and *Birdsall* vs. *Coolidge,* 93 U. S., 64.

Two other instructions were given by the court on the question of damages which were excepted to, and they are embodied in assignments of error 67 and 68. These we now consider.

EXCEPTION 67. The instruction complained of by this exception reads as follows:

" On the question of damages the plaintiff claims " that by reason of using his patented device in sew- " ing machines he was enabled to sell and did sell

"sewing machines at an advanced price of $5 over "and above what he sold the same machine for with- "out his patented improvement, and that it cost him "$1.50 to put the patented feature in each of the ma- "chines; thereby enabling him to realize a net profit "of $3.50 on each machine in which his patented "feature was used. He further claims that the de- "fendant has sold large numbers of machines con- "taining a device in infringement of his *claim one,* "thereby depriving him of sales which he would "otherwise have made. If you find these facts to be "true, and that plaintiff would have made the same "number of sales of his own machines as those made "by the defendant of his machines if the infringe- "ment had not intervened, and that the plaintiff was "able to supply the demand therefor, and that the "market value of the invention covered by *claim one* "of the Cramer patent is $3.50 on each machine, "then you will be justified in estimating the damages "by multiplying the number of the machines con- "taining the Diehl structure sold by the defendant "during the infringing period by $3.50, and the "amount so ascertained will be the measure of the "plaintiff's damages, if you find that the patent is "valid and has been infringed and that the plaintiff "is entitled to damages."

This instruction embodied the correct rule of estimating the damages. On its face it relates solely and entirely to the invention covered by *claim one* and to none other.

When it is remembered that the machines which

Cramer was selling contained the invention of claim 1 only, and not of claim 2, the appropriateness of the instruction becomes apparent.

The facts were simply these: Cramer was engaged in selling sewing machines which contained the invention covered by claim 1, but not that covered by claim 2 of his patent, and those machines are represented by plaintiff's exhibit G. This much was conceded by the counsel for plaintiff in error at pages 41 and 136 of their brief in the court of appeals. The cost of putting the invention of claim 1 into each machine was $1.50, and Cramer received $5.00 more for such a machine than he had been theretofore receiving for the machine without the invention. Consequently, his profit was $3.50 on each machine containing the invention of claim 1, and that profit was realized solely by reason of the invention of claim 1. He had built up a prosperous and remunerative business, as the evidence fully shows. The Singer Company entered into competition with him and placed upon the market an infringing machine containing the invention of claim 1, which they sold at a smaller price than that at which Cramer sold. In this way Cramer's business, according to his testimony and that of his son, was broken up and he was compelled to retire. Under these circumstances, the just and

equitable rule in estimating the damages is to allow the profits which Cramer would have made on the number of machines actually sold by the infringer. The theory is that the infringer deprives the patentee of sales which he would have made if there had been no infringement, and that the damage suffered thereby is the profits which the patentee would have made on his lost sales. In other words, the infringer takes from the patentee the business which he would have done, and thereby damages him to the extent of the profits which he would have made.

It is necessary, however, to show that the patentee was able to supply the demand, and that in all probability he would have supplied it if the infringement had not occured. Mr. Walker states the rule at section 563 of his valuable work on patents, where he says:

"Sec. 563. Where no established royalty is ap-
"plicable as a measure of the damages caused by a
"particular infringement, those damages may some-
"times be ascertained by the second method: that is,
"by finding what the plaintiff would have derived
"from his monopoly if the defendant had not inter-
"fered, but which he failed to realize because of
"that interference with his rights. Where the own-
"er of a patent is able to supply the whole demand
"for the thing it covers or produces, and where

" the whole demand would go to him if not diverted
" by some infringer, it is clear that the injury caused
" by a particular infringer can be ascertained by find-
" ing what pecuniary advantage the owner of the pat-
" ent would have derived if he had supplied that
" portion of the demand which was supplied by that
" infringer. The two conditions of this rule are pre-
" requisites of its applicability. The highest author-
" ity has announced that: 'What a patentee would
" 'have made if the infringer had not interfered with
" 'his rights, is a question of fact and not a judgment
" 'of law' (*Seymour* vs. *McCormick*, 16 How., 490).
" In order to show that a patentee would in fact have
" made a particular profit, if an infringer had not
" forestalled his sales, it is necessary to show that he
" would, but for that infringer, have made those sales;
" and to that end it is necessary to show that he could
" have supplied the articles wanted, and that the per-
" sons wanting those articles would have bought
" them had no infringer interfered. *But these points*
" *may be sufficiently established without being dem-*
" *onstrated; because demonstrations would gener-*
" *ally be impossible, and because every reasonable*
" *doubt relevant thereto is to be resolved in favor of*
" *the plaintiff*. Where these facts are proved, the
" damages of a patentee will consist of the profits
" which he would have derived from the sales made
" by the infringer, if the patentee had made those
" sales; supplemented by the amount of whatever
" reduction of prices the patentee was compelled, by
" the defendant's competing infringement, to make
" even upon the goods which he did sell."

The evidence in this case was given and the instruction in question was drawn with direct reference to the rule of law announced in this section. That the instruction complies with the section the most casual comparison will show. The instruction states what the plaintiff claims as his damages, and then instructs the jury that, if they find those facts to be true, and if they find that the plaintiff would have made the same number of sales of his own machines as those made by the defendant, if the infringement had not intervened, and if the plaintiff was able to supply the demand and that the market value of the invention covered by claim 1 was $3.50, then the jury would be justified in estimating the damages at $3.50 for each infringing machine.

The testimony shows that Cramer could have supplied the demand, and every presumption exists that he would have so done. He was carrying on the business of selling sewing machines, had built up a profitable trade, had abundant credit for procuring machines, and was having them manufactured, or rather was having his device of claim 1 manufactued, at a large foundry in San Francisco. The machines had been invariably received well by the public and were sold quickly. They gave great satisfaction and

the demand for them was increasing. See testimony of Herman Cramer, pages 42 to 51, and from pages 58-60 of the record. This evidence was not contradicted in any way whatever, and we think it is sufficient, under the rule laid down by Mr. Walker, to go to the jury. Could Cramer have supplied the articles wanted? He says that he could, and the facts of the case justify the statement. Would the persons wanting those articles have bought them from him if the infringement had not intervened? Every presumption is that they would. They had been buying them before the infringement, and the presumption is they would have continued to buy them if the infringement had not occurred. It must be remembered that the law does not require that these points should be proved to an absolute demonstration, because such character of proof is impossible. All the law requires is that such facts must be proved as would reasonably justify the jury in drawing a conclusion therefrom. On this subject Mr. Walker says at section 565:

"The evidence of damages must be *reasonably* "definite in order to justify a jury in finding a verdict "for more than a nominal amount. Conjecture will "not perform the office of proof, nor can imagina- "tion take the place of calculation in this behalf.

"But this rule is not to be used to defeat the ends "of justice. * * * It is the rule that where a "plaintiff introduces evidence to show that the dam- "ages were large, and to show the amount of those "damages as accurately as the nature of the case per- "mits him to do, and where the defendant offers no "evidence upon the subject, it becomes the function "of the jury to estimate those damages as best they "can on the basis of the plaintiff's evidence."

The case of *Creamer* vs. *Bowers,* 35 Fed. Rep., 207, is directly in point. There the patentee was engaged in manufacturing and selling his patented device. He had no established royalty or license fee, but maintained the monopoly of his patent by supplying the demand himself and realizing profits therefrom. The infringer made and sold infringing machines, and the damages were estimated by finding the number of infringing machines sold by the defendant and allowing the plaintiff for each one thereof the amount of profits which he would have made thereon if he had sold them himself. Regarding first the rule of damages in such cases, it was found to be in strict accord with section 563 of Walker, quoted above, and in support thereof the opinion says:

"The rule for estimating damages sustained by a "patentee, by an infringement, varies according to

"the mode in which he uses his patent. Where he "has fixed a royalty or license fee for making, us- "ing or selling the patented article, the amount of "such fee or royalty will be the measure of his loss, "and his damages can be readily ascertained by mul- "tiplying that amount by the number of infringing "articles; but if he maintains a close monopoly, and "is ready and able to furnish the whole market with "the patented articles, he must prove by satisfactory "evidence the advantages gained by the infringer "in the unlawful use of the patent, over and above "the advantages which he could have derived from "the use of similar articles, unpatented and open to "the use of the public; or must prove the loss or fall- "ing off of his own sales in consequence of the in- "fringement, or a loss by the compulsory reduction of "prices made necessary by the competition of the in- "fringer. The rules varies with the special cir- "cumstances of the particular case. (*Livingstone* "vs. *Woodworth,* 15 How., 546; *Seymour* vs. *Mc-* "*Cormick,* 16 How., 480; *Mayor vs. Ransom,* 23 "How., 487; *Mowry* vs. *Whitney,* 14 Wall., 620; "*Philps* vs. *Nock,* 17 Wall., 460; *Birdsall* vs. *Cool-* "*idge,* 93 U. S., 64, and several others.)"

That rule fits our case precisely. Cramer charged no royalty or license fee, but made and sold the patented machine himself, and realized his profits from such sales. He was able to supply the whole market. The defendant interfered by selling infringing machines, and by such course broke up his business en-

tirely. It is a reasonable presumption, therefore, that, if the infringement had not occurred, Cramer would have continued to supply the market, and would have made the sales which the defendant made. Hence, his damages are measured by the amount of profit which he would have made on the lost sales, but which he was prevented from making by reason of the infringement.

And in commenting on the character of the evidence required in such cases of a patentee, the opinion in *Creamer* vs. *Bowers* proceeded as follows:

" It is further objected that there was no satisfac-
" tory proof that, if the defendants had not infringed,
" they would have purchased from the complainant
" patented registers equal in number to the infring-
" ing registers made and used by them. That the de-
" fendants would have made such purchase is a rea-
" sonable conclusion from the evidence. It is certain
" that they made large purchases at first, and that they
" did not, during the time they were infringing,
" wholly cease buying from the complainant, and
" their conduct convinced the master that in all
" probability they would have continued to
" buy at the same rate as formerly if they
" had not infringed. This cannot be considered
" as a conjectural or speculative inference from
" the facts proved. It is true there may be a possible
" doubt on the subject, but in cases of wanton in-
" fringement, every doubt and difficulty would be re-

"solved against the infringer. (*Rubber Co.* vs. *Good-*
"*year*, 9 Wall., 803.) All that is necessary to prove act-
"ual damages is to furnish some reasonable basis or
"*data* on which to calculate them, and whenever the
"evidence is sufficient to show the pecuniary loss suf-
"fered by the complainant, he is entitled to be reim-
"bursed, no matter whether the infringer gained
"anything by the infringement or not. (Walk. Pat.,
"sec. 565; *Seymour* vs. *McCormick*, 16 How., 480;
"*New York* vs. *Ransom*, 23 How., 487; *Truck Co.*
"vs. *Railroad Co.*, 2 Fed. Rep., 681; *Zane* vs. *Peck*,
"13 Fed. Rep., 475; *Hall* vs. *Stern*, 20 Fed. Rep.,
"788; *Hobbie* vs. *Smith*, 27 Fed. Rep., 662; *Royer*
"vs. *Coupe*, 29 Fed. Rep., 358; *Lock Co.* vs. *Sar-*
"*gent*, 117 U. S., 552; 6 Sup. Ct. Rep. 934; *Roemer*
"vs. *Simon*, 31 Fed. Rep., 41.)"

In other words, the law does not require impossibilities. All it requires is such an amount of proof as would justify reasonable men in deducing a correct inference therefrom. It does not require demonstration. It does not require that the plaintiff Cramer should have called the 12,456 persons who bought the infringing machines from the Singer Company, and have put them on the witness stand and proved by each one of them that he would have bought Cramer's machine if the infringement had not occured. This seems to be about the line of reasoning followed by the learned counsel for the Singer Company when he says that there is no evidence to

show that these people would have bought the Cramer machine if they had not bought the infringing one. Of course the law does not require any such impossibilities from Cramer. All that was required of him in that regard was such an amount of evidence as would justify reasonable men in presuming that he would have made those sales, or at least some of them, if the infringement had not intervened. That was purely a matter for the jury to decide, for there certainly was not an entire absence of evidence on the subject. It must be remembered, also, that the evidence which was introduced on the subject was not contradicted in any manner whatever, but on the contrary its truth seems to have been conceded.

Under these circumstances the only question embodied in this exception is whether the rule of law announced by the court is correct. As stated above it was taken from a standard text-book on the subject, and we apprehend that as a rule of law there can be no question about its correctness.

But in any event the plaintiff in error was not injured by this instruction, even if it had been error to give it, which we vigorously deny. According to the instruction $3.50 should have been allowed on each of the infringing machines, and as the undisputed evidence, furnished by the Singer Company,

showed sales of 12,456 infringing machines, the verdict should have been for $43,596. The verdict that was rendered was for $12,456. Clearly, therefore, the plaintiff in error was not injured by this instruction. Indeed the plaintiff in error ought to congratulate itself in having escaped with so light a verdict. The defendant in error is the one who ought to complain, if any one does, for according to the instruction he was entitled to a verdict more than three times as large as the one he got. If our adversaries should now take the position that the jury estimated the damages at haphazard and without following any rule, the answer is that there is no exception reaching that point, and if they had desired to take advantage of it they should have done so by motion for a new trial in the lower court.

EXCEPTION 68. This instruction, which was given by the Judge in his general charge and of his own motion, reads as follows:

"The evidence as to the amount of damages "claimed by the plaintiff is not very satisfactory, but "it may be that the actual sales made by the defend- "ant in this district of sewing machines containing "the alleged infringing device for the period named, "could not have been ascertained without great labor "and delay, and as a practical way of presenting this

" evidence the plaintiff has done all that could be rea-
" ably expected under the circumstances."

There was no error in this instruction. Indeed, it is more favorable to the Singer Company than to Cramer. It related to the number of sales of infringing machines sold by the Singer Company. In order to fix the number of such sales we called Mr. Chandler, the agent of the Singer Company, who had charge of their business here, and agreed that he might estimate or average the number of sales made by the Singer Company. According to his average they amounted to 12,456. (See testimony of R. A. Chandler, from page 189 to 192 of the record.) Mr. Chandler gave his figures, and they were adopted by the court, as will be seen by reference to that portion of the court's charge contained on page 426 of the record. The grand total amounts to 12,456. It is a little difficult to perceive any error prejudicial to the plaintiff in error in this matter, as we took its own figures for the number of machines it had sold.

EXCEPTION 66. This exception relates to the question of the statute of limitations, and it challenges the action of the circuit court in instructing the jury that under section 4921 of he Revised Statutes, as amended by the act of March 3, 1897, the statute of

limitations applicable to this case was six years. The defendant contended that the proper statute of limitation to be applied in this case is the statute of limitations enacted by the State of California. This point is scarcely worthy of consideration; but as our learned adversaries seem bent on thrashing out every conceivable point, whether good, bad, or indifferent, we are compelled to take notice of this one.

Prior to March 3, 1897, there was no federal statute of limitations in existence, and this court held in the case of *Campbell* vs. *Haverhill,* 155 U. S., 610, that in the absence of legislation thereon by Congress, the various state statutes of limitations applied to cases for the infringement of patents. To meet this emergency the act of March 3, 1897, was passed, which amended section 4921 of the Revised Statutes by providing a uniform statute of limitations of six years throughout the United States. When the case at bar was tried that statute was in force, though it had not been passed at the time the suit was commenced. But it is well settled that statutes of limitation relate to the remedy and not to the right, and it has been frequently adjudged that such a statute, which was in existence at the time a particular suit was begun, may be changed before the suit is tried

and will apply in its changed form to the cause of action. If, therefore, the California State statute of limitations was in force at the time this action was commenced and said statutory period was less than six years, it was competent for Congress to enact a new and different statute of limitations which would apply to this case as well as to all other causes of action for infringement of patents which were untried at the time of the passage of the act. In fact the statute in question expressly provides that it applies to "existing causes of action." Hence, there was no error in ruling that the Federal statute of limitations of six years was applicable to this cause of action, and we cite the following authorities on the point:

Campbell vs. *Holt,* 115 U. S., 622.
Drury vs. *Henderson,* 143 Ill., 320.
Landa vs. *Obert,* 78 Texas, 46.

VI.

INSTRUCTIONS GIVEN AND REFUSED ON MINOR MATTERS CONCERNING WHICH ERROR IS ALLEGED.

Under this batch of instructions, the learned counsel specifies the following exceptions: Nos. 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31,

32, 33, 34, 35, 38, 39, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65.

It would subserve no purpose of utility to examine each one of these numerous instructions in detail. Therefore we can make only a passing comment.

EXCEPTION 14 relates to the rule of law concerning the proof necessary to establish prior invention. The specification of error is on page 816, and the request for the instruction is on page 437 of the record. It is sufficient to say that this specification of error is unavailing, because the instruction was in substance given by the court in the general charge, where almost the identical language was used. (Rec., 422.) The court merely refused to use the precise language of the counsel, preferring to use its own language, but with a slight modification. A person would be hypercritical indeed who could find any difference in substance between the request as made by the counsel and the instruction as given by the court.

EXCEPTION 15. This appears on page 401, and the specification of error relating to it appears on page 437 of the record. In substance it is that in determining what was Cramer's invention the jury should refer to the file-wrapper contents of Cramer's

application for a patent. But such is not the law. The jury has nothing to do with the file-wrapper. It is the duty of the court to tell the jury what the invention is, by construing the claim, and in so doing the court had a right to refer to, and as a matter of fact did refer to, the file-wrapper contents; but to expect a jury to wade through the interminable details of the file-wrapper, and try to find out therefrom what is the invention, is not only contrary to the law, but is expecting too much of a jury.

In answer to this exception, therefore, we say that it was the duty of the court to construe the claim, and not of the jury. Consequently, the exception is bad. But however that may be, the file-wrapper contents were read to the jury and were before the jury when they were deliberating on their verdict.

EXCEPTION 16. This exception relates to the rule of law as to what constitutes a primary invention. Possibly it contains a correct exposition of the law on that subject, but it bears no relevancy to the facts in hand. The court instructed the jury what the invention was, and left them to find whether or not it had been infringed. The fact of infringement was the material one to be considered, not the question of pioneership of the invention.

But further than this, the proposed instruction was nothing more than a statement of an abstract question of law, and it is never proper to give such instructions to a jury. It merely confuses them, and does not tend in any way to aid them in reaching a correct verdict. Courts have again and again refused to give instructions on abstract propositions of law; and this is but another illustration of the vicious practice pursued by some counsel of copying abstract propositions of law from text-books and adjudicated cases and asking a court to read them to a jury. This practice has always been condemned by courts as being highly improper.

EXCEPTION 17. This proposed instruction was incomplete, confusing, and misleading. There was no occasion whatever to give it. In the first place it is incorrect, because it says that "the first claim of the "Cramer patent has reference *only to the vertical* "*double* brace joining the legs of the two ends of a "sewing machine."

This is not true as a matter of fact or law. Cramer's invention does not have reference *only to the vertical double brace*. He has no claim for a double vertical brace, but a claim for a combination of several elements, one of which is the said brace. If this

instruction had been given, the jury would have been misled into the error of believing that Cramer had a claim for the vertical double brace. This is too apparent to be questioned.

Furthermore, another portion of the instruction is wrong, for it says that if the jury believes that the defendant's treadle " is hung in the cross-bar of said " machine and not in the vertical double brace, then " the verdict should be for the defendant." This was wrong, because it was an admitted fact that the Diehl treadle was hung in the brace and not in the cross-bar. An inspection of the machine shows this. And furthermore, the Diehl patent so states and the Singer Company's catalogues, already referred to, make a similar statement. Exhibit P, representing the infringing machine, likewise shows the fact. In the face of such indisputable evidence as this, it is somewhat astonishing that such request as the one under discussion should have been asked.

EXCEPTION 18. This exception is also but a statement of abstract law, not proper to be given. But even in that light it is not a correct statement of the law, for it says that a patentee should set forth in his specification "the principle and the several modes " in which he has contemplated the application of

"that principle," etc., etc. Such is not the requirement of the law. The patentee must specify *only one mode,* and that must be the best one in which he has contemplated applying his principle. He must not set forth *several modes.* The Patent Office will not allow him to do it. For that reason Cramer set forth only *one* mode. Therefore, if this instruction had been given, it would have been erroneous.

Concerning this proposed instruction, the learned counsel said, at pages 201-202 of his brief in the court of appeals, that it is good law because "every "word of it is in the language of the supreme court "of the United States, except the word 'patentees' is "inserted before the word 'description' in the first "line. The instruction is quoted word for word "from the case of *Burr* vs. *Duryee,* 1 Wall., 570."

It is true that the language of this proposed instruction is taken from the decision of the supreme court in the case cited by counsel, but he did not tell your Honors that it is no longer law. It was abrogated more than thirty years ago. By reference to the old and ancient patent act of 1836, it will be found that section 6 thereof provides that, when an applicant applies for a patent on a machine, "he shall fully ex-

" plain the principle and the *several modes* in which " he has contemplated the application of that prin- " ciple," etc. In the case of *Burr* vs. *Duryee,* 1 Wall., 570, referred to by counsel, this language is quoted by the supreme court from the said patent act of 1836, and the same language is quoted by the learned counsel in his proposed instruction to the jury. The case of *Burr* vs. *Duryee* was decided in 1863, while the patent act of 1836 was in force. But in 1870 the patent act of 1836 was abolished, and a new act, known as the consolidated patent act of 1870, was passed in its stead, and afterwards, in 1874, the revised statutes were compiled, which perpetuated the consolidated patent act of 1870, so that the present law found in the revised statutes is now the law of the land. Section 4888 of the revised statutes corresponds to section 6 of the patent act of 1836, and by reference to said section 4888 it will be found that, instead of the words, "The *several modes* in " which he has contemplated the application of that " principle," there have been substituted the words, " And *the best mode* in which he has contemplated " applying that principle."

In order to more clearly define the difference between the two sections, we place them in parallel columns.

SEC. 6, PATENT ACT OF 1836.	SEC. 4888, REVISED STATUTES.
"And in case of any machine shall fully explain the principle and *the several modes* in which he has contemplated the application of that principle or character, by which it may be distinguished from other inventions."	"And in case of a machine he shall explain the principle thereof and *the best mode* in which he has contemplated applying that principle, so as to distinguish it from other inventions."

Thus it will be seen that under the old law of 1836 the applicant must specify the *several modes* in which he has contemplated applying his principle, while in the present law he must specify *only one mode,* viz: the best mode. The distinction is apparent at a glance. Consequently, the proposed instruction we are now considering was improper, because it undertook to give to the jury as law the provision of a statute which had been abolished thirty years ago.

All the remainder of the proposed instruction, which relates to questions of principle and mode of operation, ideas, abstractions, and matters of that sort, was nothing more than general abstract principles of law not proper to be given. All that was necessary on that subject, however, was given by the

trial judge in his general charge, as will be seen by reference to pages 418-19 of the record.

EXCEPTION 19. This exception relates to the construction of claim 2 of the Cramer patent. It was not necessary nor was it proper. The court had already told the jury that only claim 1 was charged to be infringed, and that was all that should have been said regarding claim 2. It matters not what claim 2 covered, since the jury was given to distinctly understand that it was not charged to be infringed, and no damages were sought in respect to the same. But the instruction itself was wrong, because it stated that the patent must be considered just as though it never had in it the essential elements of claim 2.

EXCEPTIONS 20, 21 AND 22. These all relate to the same subject matter as Exception 19, and the answer made to Exception 19 applies to each of these.

EXCEPTION 23. This exception relates to the definition of a combination claim. It is another illustration of a statement of abstract law. And furthermore, it was confusing and misleading, and probably would have been unintelligible to the jury. There never was any contention on our part that Cramer's claim protected or covered the elements of his combination singly and individually. That was not a

factor in the case. Consequently, there was no necessity for such an instruction. Furthermore, the court, in its general charge, defined a combination and sufficiently instructed the jury on the law regarding such claims.

EXCEPTION 26. This proposed instruction was confusing and misleading. It was likewise defective, because it told the jury that Cramer's claim could not be infringed unless the defendants had used "the "combination of mechanical devices that are cov- "ered therein," and it made no mention of equivalents. That claim, and every other combination claim, would be infringed by using the combination of mechanical devices specified in the claim or their mechanical equivalents. The omission to refer to mechanical equivalents renders the instruction defective.

EXCEPTION 27. This instruction was substantially given by the court. Hence, it was no error to refuse it as framed in the words of the counsel.

EXCEPTION 28. This proposed instruction relates to the equivalency of trunnions and point-center screw-bolts. If it had been given, it would have taken away from the jury a decision on a question of fact. In substance, it told the jury that the screw-bolts were not the equivalents of the trunnions; but

that was the precise fact which the jury had to pass on. It was their province to say whether they were equivalents or not. It was the duty of the court to tell the jury, and the court did tell the jury, what, in law, were mechanical equivalents, and after having done so, it remained only for the jury to apply the court's instructions to the case of the trunnions and the screw-bolts, and then to determine as a question of fact whether those screw-bolts did perform the same function and in substantially the same way as the trunnions. This the jury did; but if the instruction had been given, they would have been required to find in one particular way on a question of fact.

EXCEPTION 29. This proposed instruction relates also to the equivalency of the trunnions and screw-bolts. It is very confusing, to say the least, but it was given, in substance, by the court, as will be seen by reference to page 425 of the record, where the court said to the jury: "If you believe from the evidence "that the screw-bolts with their point-centers which "were used by the defendant did not operate in sub-"stantially the same way in which the trunnions of "the plaintiff's patent operated, your verdict should "be for the defendant."

Upon comparing this statement as given to the jury by the court with the proposed instruction, they ap-

pear to be identical; therefore, it becomes the duty of the learned counsel for the plaintiff in error to explain to this court why he alleges this matter as error. Inasmuch as the instruction was given, how can he allege that it was not given? This seems to us like trifling with the court, and for his own sake we trust that counsel will explain himself.

EXCEPTION 30. The same answer applies to this as to exception 28. If it had been given, it would have taken away from the jury their decision on a question of fact, and would have practically amounted to an instruction to find for the defendant, on the ground that the screw-bolts and trunnions were not equivalents.

EXCEPTION 31. This is another abstract proposition of law which has no relevancy to the case. We shall not stop to inquire whether, as an abstract proposition of law, it be sound or unsound. What we say is that the proposition of law involved in it was not an issue in the case at bar and has no relevancy thereto. The jury were fully instructed in regard to the character of combination claims, and as to equivalents and matters of that kind, and there was no necessity to read to them a homily on the law of combinations, abounding in long and prosy definitions

and in fine-spun metaphysical distinctions unintelligible even to the trained mind of an expert, to say nothing of an ordinary juryman. Take this proposed instruction 31, read it over carefully, analyze it, and try to find out the exact thought it is intended to convey. We defy any man to say what it does mean. It is so exceedingly technical and abstruse that it requires a person more versed in patent law than we are to detect its hidden meaning. Such instructions are not proper for a jury. They do not assist the jury, but, on the contrary, confuse them.

EXCEPTIONS 32-33-34-35. These proposed instructions do not embody a correct proposition of law. They seek to limit the Cramer invention to the exact and precise form shown in his drawings, and do not allow him the doctrine of mechanical equivalents. Claim 1 has appended to it the words, "substantially as specified." This means that the invention is not limited to the device exactly and precisely as described, but *substantially* as described. This is the same proposition we have heretofore discussed under the doctrine of equivalents. The contention embodied in these proposed instructions is to the effect that Cramer is not entitled to the doctrine of equivalents in any manner whatever. Our conten-

tion is that, whatever may be the character of his invention, whether it be broad or narrow, whether it be of transcendant utility or small utility, it is entitled to the doctrine of equivalents, because the law is well settled that all inventions are entitled to that doctrine in one way or another. If these proposed instructions had been given, they would have mutilated and wiped out that doctrine of law which has been laid down with such emphasis by this court.

EXCEPTION 38. This is another statement of abstract law which has no particular relevancy to the case, and which is likewise confusing and argumentative. If the jury could have dug out from its mass of verbiage its hidden meaning, a task which we do not believe they were capable of performing, they would have merely realized another instance of the biblical simile of two grains of wheat in two bushels of chaff.

EXCEPTION 39. The substance of this instruction was given by the court in the general charge. (See page 424 of the record.)

EXCEPTION 43. In this proposed instruction, the counsel copied from various and sundry dictionaries various and sundry definitions of the word "skill," and asked the court to read them to the jury. The

inappropriateness of pursuing such a course scarcely needs argument. It is not proper to read to a jury from a selection of dictionaries the various definitions given by the different lexicographers of a certain word, and especially such an ordinary word as *skill.*

But there is another reason why these proposed instructions were wrong, and it is this. The particular question at issue was not *skill,* but *mechanical skill.* There is a difference between the terms. Consequently, it was not proper to give the jury the definition of *skill* in order to enable them to find out the meaning of *mechanical skill.*

But a still further answer is found in the fact that the court explained to the jury and defined the term mechanical skill, and gave to them all the information necessary on the subject. By reference to pages 420-1 of the record it will be seen that the court gave an instruction concerning mechanical skill which embodied the correct law on the subject.

EXCEPTION 44. This is another proposition of abstract law, unintelligible and confusing to a jury. It was no error to refuse it. To have given it would have been to confuse and obscure the issues. All that was necessary to be given on the subject embodied in

the proposed instruction was given by the court, as will be seen by reference to pages 420-1 of the record.

EXCEPTION 45. The substance of this proposed instruction was given by the court in its general charge. (See page 420—bottom paragraph—and page 421—second paragraph—of the record.)

EXCEPTION 46. This proposed instruction relates to the general proposition of law that a patentee must be the original and first inventor of the device covered by his claim. We think this point was sufficiently covered by the judge's charge. He instructed them fully on the question of anticipation, telling them, in substance, that if they found that the device covered by Cramer's claims had been in existence prior to the date of his invention, either in the shape of prior patents or prior use, then the Cramer patent was void. They understood fully that Cramer must be the first and original inventor in order to have a valid patent, and the whole charge of the court from beginning to end shows this.

EXCEPTION 47. This proposed instruction undertakes to give a definition of the term "invention," a thing which it is not possible to do. The definition given in this proposed instruction is entirely faulty,

in that it is not complete or exhaustive. Of course, an invention must involve "the finding out and con- "structing or discovering for the time something that "was not before known." But it is equally true that everthing so found out and constructed or discovered is not an invention within the sense of the patent law. This proposed instruction is really more favorable to Cramer than to the plaintiff in error, and, therefore, it could not have injured the plaintiff in error by being rejected. But, however, the definition is faulty and incomplete, and for that reason alone it should not have been given.

EXCEPTION 48. The substance of this proposed instruction was given by the court, as will be seen by reference to the record. (Pages 420-1.)

EXCEPTION 49. The substance of this proposed instruction was likewise given by the court. (See pages 420-1 of the record.)

EXCEPTION 50. This proposed instruction was faulty, because it was argumentative and a statement of abstract law.

EXCEPTION 51. This proposed instruction is liable to the same objection as the one last considered. It is argumentative, confusing, metaphysical, and

abstract. All that was necessary to be said on the subject was given by the court in his charge.

EXCEPTION 52. This is liable to the same objection as the last.

EXCEPTION 53. The substance of this proposed instruction was given by the court. (See pages 420 and 421 of the record.)

EXCEPTION 54. The substance of this proposed instruction was also given. (See page 420 of the record.)

EXCEPTION 55. The substance of this was likewise given. (See pages 420-1 of the record.)

EXCEPTION 56. The subject matter of this proposed instruction is sufficiently covered by the charge of the court. (See pages 423-4 of the record.)

EXCEPTION 57. This is a portion of the charge which was given by the court. (See pages 418-19 of the record.) It clearly states the law on the subject. Not even the most hypercritical could find any fault with it.

EXCEPTIONS 58-59. The same remark applies to these as to the preceding.

EXCEPTIONS 60, 61, 62, 63, 64, 65. These relate to the question of infringement. The charge of the

court on that subject is found on pages 423, 424, and 425 of the record. The language there used is very carefully worded, being practically the language used by other courts in adjudicated cases.

Concerning exception No. 60, the counsel seems to think that by it the court intended to tell the jury that Cramer's patent could be infringed, although the defendant had used only one of the elements of his combination; but such construction of the language of the court is very strained. By reference to the language in question, it will be seen that the only idea which the learned judge intended to convey to the jury was that it was an infringement of a patent to either *make, use,* or *sell.* He desired by the language to impress on the jury that either one of those three things was an infringement. Clearly, that was the thought attempted to be conveyed in that portion of the charge against which exception No. 60 is made, and it is unjust to the trial judge to attribute to that language the meaning that a combination claim could be infringed by using less than all of its elements.

As to exception No. 61, that is aimed at a portion of the charge appearing on pages 423-4. The learned counsel has never favored us with any special criti-

cism of this portion of the charge, and we are at a loss to understand why he charges it to be error. It is certainly in strict accord with the decision of this court in *Machine Co.* vs. *Murphy,* 97 U. S., 125.

Exception No. 62 is likewise aimed at a portion of the charge contained on pages 423-4. That particular portion of the charge is copied from the charge to the jury given by Judge Clifford in the celebrated case of the *Union Sugar Refinery* vs. *Mathiessen,* 2 Fish., 626. It is scarcely possible to cite a higher authority than Judge Clifford, but in order to satisfy the counsel even on that score we will say that the language used by him in that case in charging the jury was adopted and approved by this court in *Machine Co.* vs. *Murphy,* 97 U. S., 125. And yet in the face of these facts, the counsel asserts that the judge of the lower court erred. If the adoption of the language of Judge Clifford, used in charging the jury on the same point in another case, and followed by this court, is error, then the judge of the lower court erred in the case at bar. Otherwise, he did not.

Exception 63 is directed to a portion of the charge appearing on pages 423-4. The learned counsel says it is bad law, and condemns it in the most caustic

terms. In reply, we beg to say that this section of the charge is taken almost word for word from the charge of Judge Sawyer, given to the jury in the case of *Carter* vs. *Baker,* 1 Sawy., 512. And furthermore, our learned brother Wheaton was attorney for the plaintiff in that case, and we doubt not that the excellent charge of Judge Sawyer was inspired by his argument. Perhaps the learned counsel himself drafted that instruction. If he did, it will forever remain a monument to his wisdom and ability, for it has been cited and approved in numerous cases as being a correct exposition of the law.

As to exception 64, the criticism of the counsel is too frivolous to merit serious consideration. He objects to the use of the word "upon," and insists that it should have been the word "over." The court had spoken of the Diehl machine as an improvement "upon" Cramer's, and the learned counsel says that it should have been referred to as an improvement "over" Cramer's. If your Honors can see any difference between these two expressions, it is more than we can. Indulgence in such metaphysical refinements appears to us trifling with the court.

Exception 65 objects to that portion of the court's charge appearing on page 424, because, the counsel

says, it was telling the jury, in effect, that the Diehl stand would infringe if there was one single element in it that was in Cramer's combination. We do not so construe the language, and certainly the learned judge below never intended that it should have any such meaning.

CONCLUSION.

We must apologize to the court for the length of the foregoing brief, but this was due to the large number of assignments of error, and to the fact that we have not yet been favored with a copy of the petitioner's brief. It is possible that the learned counsel for petitioner will not argue all his assignments of error found in the record, and may abandon some of them, in which event all that portion of our brief relating to the abandoned assignments of error will become superfluous, and the court may disregard it.

We respectfully submit that the judgment should be affirmed.

JOHN H. MILLER,
Counsel for Respondent.

San Francisco, February 15, 1903.

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Supreme Court of the United States.

OCTOBER TERM, 1902.

No. 215.

SINGER MANUFACTURING COMPANY, PETITIONER,

vs.

HERMAN CRAMER, RESPONDENT.

Additional Brief on Behalf of Herman Cramer.

By permission of the court we say a few words in answer to the petitioner's brief:

I.

EXCEPTION TO REFUSAL OF COURT TO INSTRUCT JURY TO RETURN A VERDICT FOR DEFENDANT.

We do not care to say anything on the merits of this proposition in addition to what was said in our opening brief, but we do desire to point out several inaccuracies of statement made under this heading in the brief of counsel for petitioner.

1. It is constantly asserted that the "Diehl treadle is hung in the old common cross-bar and not in or on the old vertical cross-brace" (p. 29).

This is not correct. The Diehl treadle *is* hung in the old vertical brace and is *not* hung in the old common cross-bar.

The specification of the Diehl patent, after describing the old vertical brace and treadle, says:

"This treadle is supported in the lower portion of said brace."

All the claims of the patent, except the fifth, specify, in substance, that the treadle is mounted in the brace. The fifth claim reads as follows:

"A cross-brace for sewing-machine stands, having at its base a cross-bar, combined with a treadle mounted in said cross-bar," etc.

This means that the cross-bar is the lower end of the brace, an integral part of the brace. It does not refer to "the old common cross-bar" and is not the same. The old common cross-bar was merely a rod joining the two legs of the machine and binding them together. That device is not found in the Diehl patent at all. He has dispensed with it. The thing which he calls "a cross-bar" is not the "old common cross-bar," but is nothing more nor less than an integral part, the lower end of the vertical brace.

Furthermore, the Singer catalogues state that the treadle is "entirely supported within the brace" (Rec., p. 51).

2. At page 55 of counsel's brief it is asserted that "there is no testimony in this case from any user of the device of

the Cramer patent, purchasing the same of Cramer, that it has any value."

We reply that Mrs. Abbott testified that she used a Cramer machine "for ten years steady" (Rec., 155), and that it gave perfect satisfaction; and witnesses Brown and Lawlor, although they had not used the machine, testified that the invention was of great value.

Herman Cramer, Herman Cramer, Jr., and L. W. Seely also testified as to its great value.

All this testimony must be taken as true on this hearing.

3. It is asserted by counsel that since the expiration of the Cramer patent no manufacturer has adopted the Cramer device or hung its treadle in the brace (Rec., 56). Were this a fact—and we vigorously and emphatically deny that it is a fact—it would not be material. This case must be heard on the record which was before the lower court, and not on something alleged to have occurred since then.

Furthermore, the only way by which this alleged fact is claimed to appear is by an *ex parte* statement of the petitioner in its application for the writ of *certiorari*, which we had no opportunity to deny. Surely counsel cannot suppose that said *ex parte* statement of his client is a part of the evidence, much less an undisputed fact in this case, to be considered by the court in deciding whether the lower court erred in the trial.

4. At page 57 it is said by counsel that "the testimony and the old art show, however, that every advantage claimed for the idealized construction of the Cramer patent by his counsel is present time and again in the old art and

in sewing machines, and for thirty years has been there present and not departed from."

This statement is not supported by the record. (See testimony of H. Cramer, Rec., pp. 38–40; L. W. Seely, Rec., p. 120; A. C. Brown, Rec., pp. 160, 161; Jos. Lawlor, Rec., pp. 185–188; H. Cramer, Jr., Rec., pp. 175, 176; Mrs. Abbott, Rec., p. 155.) The testimony of these witnesses is to the contrary of counsel's position.

It may be that counsel meant to say that some of his own witnesses testified as he asserts. If that is his position, the answer is that it raised a conflict of evidence on a question of fact which was for the jury alone to pass on and cannot be reviewed here.

5. On page 66 of counsel's brief he has misquoted the decision of the Court of Appeals, in that on line 8 of the quotation there appearing, before the word "treadles," he has omitted the words "bearings of the." (See Rec., p. 459.)

6. At page 89 counsel again misquotes said decision. At the bottom of that page he asserts that the court instructed the jury: "If you determine that the Diehl structure is in some respects an improvement, *but not otherwise* an infringement," etc., etc.

The instruction as given was: "If you determine that the Diehl structure is in some respects an improvement, *but in others* an infringement," etc. (See Rec., p. 424.)

II.

Damages.

Counsel has argued this question generally, asserting that there was no evidence whatever of any damages; but there is no assignment of error broad enough to reach the point. The only assignment of error he relies on in this regard is No. 25, argued in our opening brief at pages 230 *et seq.* That assignment, however, goes only to the question of segregation of damages, contending that there was no evidence to show how much of the damages was due to claim 1 *alone*. There is no assignment of error on the subject of damages generally under which this point can be reached. The only assignments of error on the subject of damages in any phase are Nos. 24, 25, 66, 67, and 68. No. 24 was substantially given. (See p. 230, our opening brief.)

No. 25 relates solely to segregation of damages between different claims;

No. 66 relates only to the statute of limitations;

No. 67 relates only to the measure of damages; and

No. 68 is more favorable to Singer than to Cramer.

But in any event there was some evidence of damages. Permit us to marshal the facts in logical sequence, viz:

1. Cramer was a manufacturer and seller.

2. He granted no licenses.

3. He first made a small batch of the patented devices, six or seven, at Sonora, and they met with ready sale, but cost too much.

4. He then had manufactured at San Francisco thirty-five or forty at a cost of $1.50 each.

5. These he sold at an advance of $5 on each machine.

6. These sales were made up to 1885.

7. After these sales were made Cramer entered into negotiations with eastern manufacturers to manufacture the devices for him on a large scale and at a low figure.

8. At that stage the Singer Company entered the market with the infringing machine, selling at $5 less than Cramer.

9. The result was that Cramer's business was ruined and he had to retire and go to law.

10. He was able to supply the whole demand; and

11. The presumption is strong that he would have supplied that demand if the infringement had not occurred.

Cramer testifies to all the above facts, and in many of them he is corroborated by Herman Cramer, Jr., and Mrs. Abbott. When we add that the invention is one of great value, it seems that the facts were sufficient to go to the jury. That is all we have to show.

Petitioner's position is the assertion that Cramer ceased selling in 1885, and that the Diehl machine did not reach Cramer's territory until 1886 or 1887.

1. In the first place, Cramer fixed no specific date when he ceased selling, but says it was along about 1884 or 1885 *when they came up there with the Diehl machine.* (See opinion

Court of Appeals, Rec., p. 464.) While not clear as to the exact date, he was clear that it was when the Singer Company came in with the infringing machine.

Herman Cramer, Jr., corroborates the testimony (Rec., pp. 177, 178, 179). He testifies that the Diehl machines appeared in 1884 or 1885 and drove his father out of business.

2. In the next place, it does not appear, as counsel asserts, that the Diehl stand did not appear in California until 1886 or 1887. To prove this the company called Mr. McMillan, the receiving and shipping clerk of the company at San Francisco. He testified that he had examined the books of the company, and the first invoice of Diehl stands he was able to find therein was on April 14, 1886, from which fact he assumed that none such had been received prior thereto.

On cross-examination he testified that he had no distinct recollection apart from the entry in the books; that he examined no books prior to 1885; that the books prior thereto had been sent to the reduction works and burned up.

On redirect examination counsel endeavored to make the witness swear positively that the first arrival of Diehl stands was on April 14, 1886. His answer was, "I can state it was the first that I knew of that I had seen." (For above see Rec., pp. 290–291, 308–315.)

The substance of this man's testimony is that he had no recollection apart from the books, but that the undestroyed books showed an invoice of April 14, 1886, and all books prior to January, 1885, had been destroyed.

H. F. Blanchet, the book-keeper, gave similar testimony, and also showed that the books were burned two years prior

to his testimony, which would be after this Cramer litigation began (Rec., p. 327).

Two other witnesses, Donald McKenzie and C. F. Krantz, were called as witnesses, but their testimony is of no moment.

In opposition to this the record shows that the Singer Company was advertising the Diehl stands in 1885 by catalogues and soliciting orders therefor, while Cramer, Sr., and Cramer, Jr., both testify that those stands appeared in 1884 or 1885 and drove them out of business.

Also it appears that these Diehl stands were placed on what is called the "Improved Family Singer" machine, which was abbreviated as "I. F. Singer." The catalogue of 1885 so calls them (R., p. 52), and shows the Diehl stand used therewith.

Another catalogue, opposite page 51 of Record, says that all these family machines are mounted on the new patented (Diehl) stand. Also it appears that in 1884 and 1885 the Singer Company was selling these "I. F. Singer" machines on the Pacific coast (Rec., pp. 310–311, 326). Blanchet and McMillan testified to that fact.

If all the "I. F." machines contained the Diehl stand, as stated in the catalogue, and if "I. F." machines were sold in California in 1884 and 1885, it is apparent that counsel's theory is wrong. In any event, there was a sufficient conflict in the evidence to necessitate its submission to the jury.

3. But, further, even though it should be a fact that the Diehl stands did not reach California until 1886, that would not alter the case, because the advertising of such stands and soliciting orders in 1885, offering to sell at $5 less than

Cramer, would be sufficient to break up his business, and the jury might have taken that view. We cannot conceive of a more effectual way to break up one's business than to advertise and solicit orders and offer to sell a rival machine at a smaller price.

But the truth of the whole matter is probably that the jury did not believe the Singer witnesses and did believe the Cramer witnesses. This they had a right to do, and that is no ground for reversal. The jury is the sole and ultimate arbiter of all contested matters of fact.

III.

Effect of Diehl Patent as Evidence.

The requested instructions on this point relied on by counsel are Nos. 37 and 40. (See pages 88 and 89 of his brief.)

He asserts that where a defendant is acting under a junior patent he is entitled to an instruction that such patent is *prima facie* evidence of non-infringement.

Permit us to examine this contention.

In *Corning vs. Burden*, 15 How., 270, in an opinion rendered by Mr. Justice Grier, the question of the effect of the defendant's patent subsequent in date to the plaintiff's patent, on trial of an action at law for infringement, was considered by this court for the first time. At the trial the defendant offered to read in evidence the defendant's patent, but, on the objection of the plaintiff, the court refused to allow him to do so, and this court held such ruling to be error. In rendering the decision Mr. Justice Grier said:

"This is a question on which there may be some difference of opinion. In some circuits it has been the practice, when the defendant has a patent for his invention, to read it to the jury without objection; in others it is not received, on the ground that it is irrelevant to the issue, which is a contest between a machine of the defendant and the patent of the plaintiff, and that its posterior patent could not justify an infringement of a prior one for the same invention."

The learned justice then goes on to show that under the patent act of 1793 no patent was *prima facie* evidence that the invention was new or useful, and that even the plaintiff was bound to prove those facts in respect of his own patent in order to make out a case, but that under the act of 1836 patents were *prima facie* evidence of novelty and utility. In deciding the point in hand the learned justice said:

"It is not easy to perceive why the defendant who uses the patented machine should not have the benefit of a like presumption in his favor arising from a like investigation of the originality of his invention and the judgment of the public officers that his machine is new and not an infringement of the patent previously granted to the plaintiff. It shows at least that the defendant has acted in good faith and is not a wanton infringer of the plaintiff's rights and ought not, therefore, to be subjected to the same stringent and harsh rule of damages which might be justly inflicted on a mere pirate."

On that ground alone the judgment was reversed. This case does not hold, therefore, that in an action at law for infringement of a patent, where the defendant is acting under a subsequent patent, that he is entitled to an instruction to the jury to the effect that his patent is *prima facie* evidence

of non-infringement. The decision in the case quoted merely went to the fact that the defendant was entitled to put his patent in evidence. The court was very guarded in his language as to what presumption would arise therefrom, merely saying: *It is not easy to perceive* why the defendant's patent should not have a like presumption as the plaintiff's patent, and goes on to say positively, however, that it is competent to be put in evidence for the purpose of showing that the defendant is not a wanton infringer. The case holds, therefore, these two propositions: (1.) That the defendant is entitled to put his patent in evidence. (2.) That its effect, at least, is to disprove wantonness in the infringer. Those are the only two points authoritatively decided by that case.

In the subsequent case of *Blanchard vs. Putnam*, 8 Wall., 420, decided at the October term of 1868, wherein the opinion was rendered by Mr. Justice Clifford, the defendant relied on a subsequent patent and offered it in evidence. Plaintiff objected, but the court overruled the objection and admitted the subsequent patent in evidence. This court held that this ruling was error and reversed the decision, saying, among other things:

"Such evidence was inadmissible for the purpose for which it was offered, and should have been excluded, as the novelty of the invention was not open and because it presented on the question of infringement an immaterial issue, not involved in the pleadings, and because the evidence was well calculated to mislead the jury by withdrawing their attention from the real subject-matter in controversy."

It is urged, however, that this case was overruled by *Miller vs. Eagle Mfg. Co.*, 151 U. S., 186, and *Boyd vs. Janesville Tool Co.*, 158 U. S. We disagree with that contention.

In the one first cited three subsequent patents were put in evidence. No objection appears to have been made thereto, and the precise point under discussion does not appear to have been raised. In referring to these subsequent patents, all that this court says on the subject is as follows:

"Again, the issuance of the patent to Gardiner and Downing, Berlew, and Kissell and Elder creates a *prima facie* presumption of a patentable difference from that of the Wright patent of 1879."

Undoubtedly this is a correct rule of law. There may be a "patentable difference," and yet the subsequent patent may be an infringement of the prior patent.

In the second case cited, *Boyd vs. Tool Co.*, the point in hand did not arise at all. It appeared there that the applications for both the plaintiff's and the defendant's patents were pending in the Patent Office at the same time, and all that this court said in regard thereto is as follows:

"As both applications were pending in the Patent Office at the same time, and as the respective letters were granted, it is obvious that it must have been the judgment of the officials that there was no occasion for an interference and that there were features which distinguished one invention from the other."

This fact, however, seems to have played no part in the decision of the case, inasmuch as the court decided the case on the ground that the plaintiff's invention was a narrow one and did not cover the specific construction used by the defendant.

It is reasonably clear, therefore, that neither of the last-cited cases overrules the emphatic decision of this court laid

down in *Blanchard vs. Putnam*, and by no possibility can they be held to sustain the doctrine that on the trial of an action at law for infringement of a patent, where the defendant is acting under a subsequent patent, the defendant is entitled to an instruction to the jury to the effect that the granting of the subsequent patent is *prima facie* evidence of no infringement. If in such a case the subsequent patent is admissible in evidence at all, it must be only for the purpose of excusing the defendant from wanton infringement and to show, in the words of this court, that he is not "a mere pirate," and this is for the purpose of mitigation of damages.

We find support for the above conclusion in the case of *Norton vs. Can Co.*, 59 Fed., 137, wherein the opinion was rendered by Mr. Justice McKenna, then sitting on the circuit bench. That was an application to punish defendant for contempt for the violation of an injunction, and he sought to justify himself by the contention that his machine was made under a subsequent patent, and was, therefore, *prima facie* evidence of no infringement. But in the decision of the court it was pointed out that the earlier case of *Corning vs. Burden* had been overruled by the case of *Blanchard vs. Putnam*, and that the only relevancy of the subsequent patent was to show that the contempt was not willful. In other words, it merely went in mitigation of damages.

Counsel for petitioner has referred to the decision of the Court of Appeals for the ninth circuit in *Ransome vs. Hyatt*, 69 Fed., 148, in support of his contention; but that case merely holds that "the issuance of the defendant's patent creates a *prima facie* presumption of a patent-

able difference from the prior patent of the plaintiff." It does not appear from the report what was the wording of the particular instruction requested in that case, and the only kind of instruction that the Court of Appeals said the defendant was entitled to was an "instruction which would permit the jury to consider the presumption that the law creates from the fact that a patent has issued in any case."

Of course, there must be "a patentable difference" between a subsequent and a prior patent, for otherwise the subsequent patent would not issue. Such patentable difference, however, inheres only in the claim of the patent and is not commensurate with the proposition that the issuance of such a patent is a *prima facie* presumption that it does not infringe any other patent. Scarcely any improvement patent is issued which does not infringe some prior patent. And yet the subsequent patent may be valid. As soon as a person secures a patent for a broad and pioneer invention, the inevitable result is that improvements will be made thereupon by other persons, and that they will take out patents for such improvements. These subsequent patents are infringements of the prior broad patent, although there is a *prima facie* presumption that there is a patentable difference between their claims and the pioneer machine. All that this court has ever decided is that there is a *prima facie* presumption of such "patentable difference," but it has never decided in any case that there is a presumption that the subsequent patent is not an infringement of the prior patent.

IV.

Sundry Other Matters.

Most of counsel's brief is devoted to arguing the evidence, as if this were an appeal instead of a hearing on writ of error. In fine, he has argued the case *de novo*. Of course, that is improper and will be unavailing. Only errors of law will be considered. This court does not concern itself about the weight of evidence or the correctness or incorrectness of the jury's verdict. It can review only alleged errors of law on the part of the lower court.

The questions of utility, aggregation, equivalents, *et cetera*, argued by counsel, are foreclosed by the jury's verdict, there being no charge that the court erred in its instructions on those points.

The refusal of the court to instruct that a witness false in one part of his testimony is to be distrusted in others has been already answered in our other brief, from page 316 to page 322.

Only one word more. In his conclusion opposing counsel says, "This case is without a semblance of justification or palliation for its commencement or prosecution," and he further says that "speculators and adventurers are the real plaintiffs," and much more of the same tenor.

We resent this charge with indignation, and assert that there is no evidence in the record to justify such language. It may be true that Cramer, an old man now verging on the grave, is not blessed with any great amount of this world's goods, and was not able, alone and unaided, to cope with his rich and powerful adversary; but surely

poverty cannot be imputed to him as a crime, nor can he rightfully be subjected to criticism if he has sought the aid of his friends in the legal warfare he has waged for ten years.

And, furthermore, we venture to remind the learned counsel that such language is not in keeping with the time or place. It is unworthy of the learned gentlemen. Vituperation is not argument and should find no place in the dignified discussion of great legal principles before the most august judicial tribunal of the land.

Respectfully submitted.

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For Cramer.